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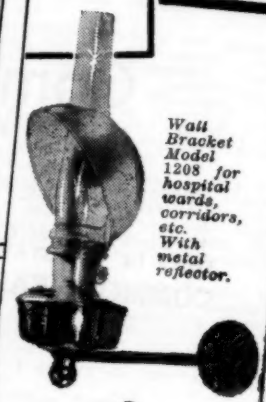

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SUPPLEMENT NUMBER 17 ON WAR MEDICINE AND SURGERY:
Wounds of the Chest in Wartime.

SPINAL ANÆSTHESIA IN THE AUSTRALIAN IMPERIAL FORCE: A REPORT OF 494 CASES AT 2/1 AUSTRALIAN GENERAL HOSPITAL.

By J. F. McCULLOCH,
Major, Australian Army Medical Corps.

IN the early stages of the 2/1 Australian General Hospital in Palestine, anæsthetic supplies and equipment were extremely limited. Cyclopropane was not available at all, and nitrous oxide and "Pentothal Sodium" were available in such minute quantities that they were kept for use in dire emergencies only. The choice lay between the ethyl chloride and ether sequence or some modification of it, such as endotracheal anæsthesia with a Magill tube and Flagg's can, "open" chloroform which was used in the presence of a naked flame, and spinal anæsthesia. For this the only preparation was a solution of "Percaine" (1 in 1,500), lighter than cerebro-spinal fluid, of which fortunately there were adequate supplies.

The ethyl chloride and ether sequence, while hallowed by tradition and in many ways convenient, left a good deal to be desired. The majority of patients treated in this hospital over a period of almost two years were strong, muscular men, most of them heavy smokers and of a high standard of physical fitness. These were predisposing factors to difficulties during the induction, maintenance and recovery periods of anæsthesia. Also, during the early stages at least, the patients had all to be transported either on stretchers or by ambulance for considerable distances in wind, dust and sometimes rain. There was in addition a shortage of trained staff to accompany unconscious patients from the operating theatre to the wards.

These facts and the disturbingly high incidence of chest complications encouraged me to use the 1 in 1,500 solution of "Percaine" with which I was familiar in civil anæsthetic practice, at first tentatively, and later with increased confidence, as the adaptation of technique to local conditions became more complete. The views previously held as to the nature of the surgery one would encounter proved in the early days at least to be quite erroneous, and it was found that the majority of cases in which operation was necessary were similar to those in civil practice. Hernial repairs, mostly inguinal, but occasionally ventral and umbilical, appendicectomies, rare excursions into the upper part of the abdomen and the thorax, and various orthopædic operations, formed the bulk of the surgical work done in this hospital. For most of it spinal anæsthesia proved ideal.

The success of any technique depends largely upon minute attention to detail, and the establishment of routine procedures which are easily carried out by one's assistants. Such a routine was achieved slowly and with some difficulty in the early days of this hospital, becoming more stabilized as time went on and the various factors were properly coordinated. It will be described in some detail, though nothing oustandingly different or original is claimed for it.

Physical Examination.

Of the first importance is the pre-anæsthetic interrogation and examination of the patient, which was made whenever possible on the afternoon or evening before operation. The anæsthetist gets an idea of the type of patient with whom he is dealing, of possible difficulties in the way of spinal puncture, as in the case of fat or arthritic patients, and of the reaction to the idea of operation. Often some explanation of the proposed course of action was found desirable. Inquiries as to previous anæsthesia and its nature and sequelæ (if any) were always made. Occasionally one got a history of headache following spinal anæsthesia, and in such cases a different form of anæsthesia was usually employed. Inquiries as to personal habits in the matter of tobacco and alcohol as well as regarding previous illnesses were also made. In cases in

which spinal anæsthesia was particularly not wanted some other technique was always followed unless there were strong indications to the contrary.

Premedication.

Premedication was ordered when the physical examination was made, and as far as possible a time was fixed so that it was given forty-five minutes before operation. The drugs available were extremely limited, and except in the cases of very nervous patients no sedative was given the night before operation. Of the barbituric acid group the only one was phenobarbital, which was found ineffectual in most cases. Paraldehyde given *per rectum* was used occasionally, and though it was quite satisfactory in many ways, owing to the extra work involved it was abandoned in favour of morphine (one-quarter of a grain) and hyoscine (one one-hundred-and-fiftieth of a grain). Owing to the great differences among the patients in weight, temperament and reaction to drugs, this very moderate dose was chosen as being the most suitable. In most cases it was sufficient to bring the patient to the operating theatre tranquil, if not actually drowsy, but still cooperative.

Preparation of the Skin.

Surgical preparation of the skin of the lumbar region was carried out as a routine measure, preferably not with iodine. If the skin of the abdomen had also to be prepared a separate dressing was applied and strapped at the corners so that it was not displaced during the necessary posturing.

Sterilization of Instruments.

The syringe, usually a 20 cubic centimetre glass one with a Luer-Lok fitting, a fine hypodermic needle to fit on the end of this, a spinal needle of gauge 20 or 22, and the ampoule of "Percaine", were all boiled together for five minutes in a separate container of double distilled water. Where more than one operation was being performed, two sets of instruments were used alternately, so that one was always ready for use at a moment's notice.

Anæsthetic Technique.

Two main techniques were used with considerable modification, those of Howard Jones and Norman Lake. I am also greatly indebted for enthusiastic help and advice to Major Graham Macpherson,[1] R.A.M.C., whom I met in Jerusalem early in 1940.

Adequate posturing, of vital importance in this connexion, is a simple matter on a modern operating table; but it had to be achieved on an operating theatre table of a primitive camp variety, an ordinary kitchen table in the anæsthetic room, or an ambulance stretcher. The varying degrees of tilt were obtained by the use of sandbags, pillows and boxes, the most valuable and convenient of the last-mentioned being a small case labelled "Gordon's Gin". These makeshifts were resorted to mainly to save time in dealing with a number of cases, as they permitted of the anæsthetization of one patient during the concluding stages of the preceding operation. It was thus possible to carry one patient out of the operating theatre and next one in, ready for pre-operative preparation.

The spinal puncture itself was made with the patient in one or other lateral position or prone. The decision was dependent upon the site of the operation and factors which are to be described shortly. One or two drops of the "Percaine" solution were used for anæsthetizing the skin. This was done by raising a wheal with the fine hypodermic needle attached to the syringe after the anæsthetic solution had been drawn up to the required level. This was made midway between the spines bounding the space selected and the mid-line. No attempt was made to anæsthetize the track of the needle. The puncture was made at once and except in rare cases was quite painless. The solution, warmed to slightly more than blood heat, was injected gently, but not particularly slowly, and without being mixed, the necessary posturing being done at once in those cases in which it had not been possible to do it before.

The site of puncture was usually the third or fourth lumbar intervertebral space, though occasionally the second was used in the case of a high block. The risk of injuring the cord, which ends at the level of the disk between the first and second lumbar vertebræ, always seems to me too great to permit of puncture at higher levels as advocated by some writers, particularly as perfectly satisfactory results can be obtained by puncture at the levels indicated. Although the distance between the second and fourth intervertebral spaces is approximately two inches, there seemed little difference in result if dosage and posture were accurate.

The whole aim of spinal anæsthesia seems to me the soaking of as few nerve roots as possible, consistent with the adequate abolition of unpleasant sensations. In this way one minimizes the risks attendant upon paralysis of the vasoconstrictor mechanism and the discomfort or danger of a serious fall in blood pressure, as well as the by-effects of "Percaine". It is therefore of primary importance that the patient should be accurately postured. I had always found that in blocks involving the lumbar segmental distribution it was difficult to control the position of the fluid because of the lumbo-sacral curve. It was found in the majority of the cases in this series that the site of operation was unilateral, and therefore it was feasible and much easier to leave the patient in the lateral position in which the spinal puncture was made, with the side to be anæsthetized uppermost (see Figure I).

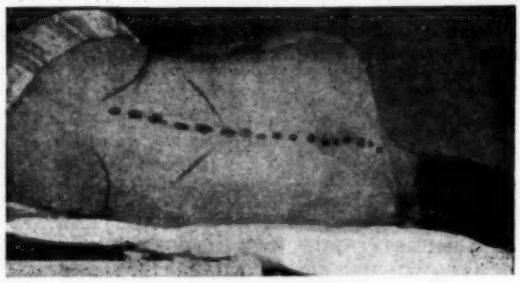

FIGURE I.

Lateral position with 5° of tilt. Used for spinal puncture and for fixation of the "Percaine" solution in unilateral operations on knee, thigh, or gluteal region. For operations on the foot, slightly more tilt was given. Iliac crests, lower ribs and vertebral spines are marked in the diagrams.

In this way one is able to visualize the lumbar spines as a row of dots in a straight line instead of as a fixed and rather awkward curve as when they are viewed in profile, and to estimate more easily by direct vision the degree of tilt necessary to make the anæsthetic solution move to certain root levels. It was interesting to observe by plotting the level of anæsthesia at the end of the operation that on the dependent side a diminution of sensation had occurred, though not nearly to the same extent as on the other.

Dosage.

"Percaine" is a very potent drug, whose toxicity weight for weight has been found experimentally[2] to be much greater than that of either cocaine or "Novocain". The question of toxicity, however, is a relative one, and in the extreme dilution of the 1 in 1,500 preparation the degree of toxicity is small. No attempt was made to work out an accurate dose for individual patients according to the length of the vertebral column; but a moderate dose was aimed at. Except in the case of very big men, or when prolonged anæsthesia was considered desirable, no alteration was found necessary. I have been repeatedly struck by the fact that doses much smaller than those originally advocated can produce completely satisfactory anæsthesia. In the Middle East, although supplies of this preparation were adequate, there was always the threat of sudden shortage, and it became a point of honour to make each

ampoule stretch to the maximum. Two and sometimes three patients were regularly anæsthetized from one ampoule.

In no case did the dose exceed 12 cubic centimetres, and this was given only for high blocks or when the operation was expected to be long, as in the case of repair of an umbilical, ventral or double inguinal hernia. For high blocks and most mid blocks—that is, in regions supplied by the seventh to tenth thoracic root distribution—the patient was postured on the table first, in the prone[3] position over a sandbag and pillow or gall-bladder rest, placed in such a way that the lower thoracic spinous processes formed the highest point of a curve varying in sharpness with the peculiarities of the individual patient, the boundaries being the head and the proximal portion of the spinal column and the lumbo-sacral region (see Figure II). This seemed to be a safer and much more accurate method than that of Etherington Wilson,[4] which, while admittedly in many ways more convenient, depends for its success on the assumption that the specific gravity of the cerebro-spinal fluid is fixed and invariable in different subjects. There is good scientific evidence that this is not the case,[5] and this fact may account for the fact that deaths have been reported to follow his procedure.[6] In the method mentioned above, described by Norman Lake, it is impossible for the fluid to reach

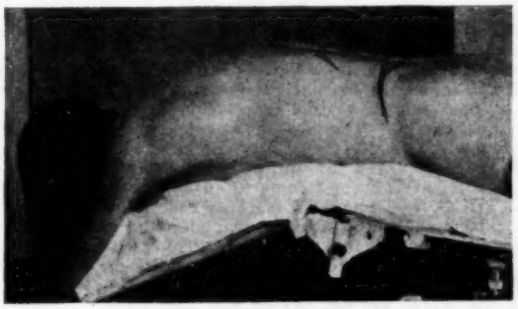

FIGURE II.

Patient in position for puncture in cases of high or mid-abdominal block. This was maintained for six minutes following the injection of the "Percaine" solution and the patient was subsequently placed in position for the surgeon.

beyond a fixed level. The puncture in these cases was made with the patient in the prone position after the posture had been arranged as described. It was found with experience to be little more difficult than when the patient was in the lateral position. In some cases it was hard to be sure of having entered the theca, owing to the pressure of the fluid being insufficient for it to flow from the needle. Verification was easy by the aspiration of some of the fluid with a syringe. In the rare case in which difficulty in puncture was experienced when the patient was in the prone position, he was turned into the lateral position, the puncture was made, and the patient was restored to the prone position as soon as possible. This was found undesirable, as it involved a good deal more movement.

One of the disadvantages of this technique is undoubtedly the discomfort of the position, of which a few patients complained. In some cases nausea or vomiting occurred, with occasional sweating and deterioration of the condition. In the early cases this sometimes gave rise to some worry, and the position was changed before the full six minutes had elapsed. This was apt to result in imperfect anæsthesia, so it became my practice with increasing experience to leave the patient prone for the full time, assuring him that he would feel quite comfortable as soon as he was turned over, which was always found to be the case.

Since returning from the Middle East and while working at a base hospital, I have found that a small dose of "Pentothal", usually 0·5 gramme, is quite sufficient to obviate the discomfort of this position if any complaint is made. If it is necessary for any adjuvants during traction on mesenteric structures, as in gastric or biliary surgery, a little more "Pentothal" or some nitrous oxide and oxygen have been found quite satisfactory. After the patient had been left in the prone position as described for six minutes, the table was straightened out, and the patient was turned on to his back with a slight head-downwards tilt ready for operation.

For the removal of an appendix the usual dose was ten cubic centimetres given with the patient in the prone position, usually into the fourth space, while for the repair of an inguinal hernia the same dose was given with the patient in the lateral position. For this and other operations involving the same root distribution the patient was left in the lateral position, in which the puncture was made and six minutes were allowed with the side to be operated on uppermost and the table horizontal (see Figure III). The head was lowered by dropping the upper

FIGURE III.

Position for spinal puncture and subsequent fixation of "Percaine" solution in unilateral operations involving lower dorsal root distribution, such as repair of inguinal hernia, varicocele or hydrocele.

end of the table, or if, as was often the case, the patient was on an ambulance stretcher and therefore five or six inches off the floor, his head was allowed to rest on a low pillow on the floor. This was done to obviate the risk, to me a very small one, of a spread towards the cranium of the anæsthetic agent, with involvement of the phrenic roots from the cervical plexus or the vital centres of the brain.

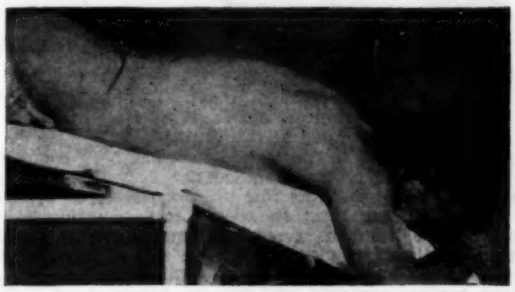

FIGURE IV.

Position of injection of "Percaine" solution for purely sacral block (operations on the anus or excision of pilonidal cyst).

In the case of operations on the knee, the commonest of which was a torn medial meniscus, a similar dose and posture were used, but the foot of the table or stretcher was raised about 5° so that the roots at a lower level (mid-lumbar as opposed to lower dorsal) would be soaked (Figure I). Otherwise the technique was the same. For operations on the feet a similar technique with a steeper tilt was used in unilateral cases. If the operation was bilateral, the patient was turned into the fully prone position, and the necessary degree of tilt was achieved by raising the foot of the table or the pelvis with sandbags.

TABLE I.

Nature of Operations.	Number of Cases.
Removal of torn medial meniscus (unilateral)	103
Removal of torn medial meniscus (bilateral)	1
Various orthopædic operations	81
Operation for the relief of intestinal obstruction	1
Repair of inguinal hernia	119
Repair of double inguinal hernia	5
Repair of femoral hernia	1
Repair of umbilical hernia	1
Repair of umbilical hernia and right inguinal hernia	1
Repair of incisional hernia	4
Repair of left inguinal hernia and hæmorrhoidectomy	1
Operation for undescended testis	4
Removal of cyst of epididymis	2
Drainage of psoas abscess	1
Nephrolithotomy	1
Appendicectomy	67
Ureterolithotomy	2
Retrograde pyelography	3
Cystoscopy	6
Hæmorrhoidectomy	65
Excision of fistula-in-ano	10
Excision of fistula-in-ano	4
Excision of anal warts	3
Excision of pilonidal cyst	7
Therapeutic, for the relief of paralytic ileus	1
Total	494

In the case of purely sacral blocks when a limited area was to be anæsthetized, for operations involving the anus or coccygeal region, a dose of six cubic centimetres was given with the patient in the lateral position. He was then placed in the prone position and given a head-downwards tilt of about 15°. As an alternative to this, the pelvis could be raised by two sandbags (see Figure V). As in other cases, six minutes or longer were allowed for the "Percaine" solution to take effect. This steep tilt ensures the soaking of the sacral nerve roots, and anæsthesia of a saddle distribution results.

FIGURE V.

Alternative position for sacral block when steep head-downward tilt is not easily obtainable.

Since this series in the Middle East has been completed, it has been found that even smaller doses may be used with satisfactory results. For the removal of an appendix it has been found that the seven cubic centimetres are completely efficient if given with the patient in the left lateral position, with the table level and a thick sandbag in the lumbar groove to elevate the lower dorsal and upper lumbar vertebræ and thereby bring about soaking of the corresponding nerve roots. On several occasions four cubic centimetres have been used for a sacral block with great success. This provides clinical evidence as to the potency of "Percaine" as an anæsthetic agent, which it is interesting to compare with the results of animal experiments. Ten cubic centimetres of the 1 in 1,500 solution contain 6·6 milligrammes of the drug; this was sufficient for the majority of the operations undertaken in this series. If "Novocain" was used, at least 100 milligrammes would be necessary to produce a comparable result, with much shorter duration of anæsthesia.

Types of Operative Procedures.

The orthopædic operations referred to earlier were a mixture of set operations for the relief of *hallux valgus* and other conditions of the toes, dissection of bursæ connected with the knee joint, and operations for the removal of foreign bodies of the lower extremity, as well as for the treatment of some fractures. For foreign bodies and fractures in the absence of gross shock it was ideal, as it allowed for localization of the former under fluoroscopic screen if necessary, and for the manipulation in the case of fractures.

Blood Pressure Readings.

The possibility of a calamitous and irremediable fall in blood pressure has always been the bogy of those interested in this form of anæsthesia. In my early cases, which were few and far between, blood pressure readings were taken at the time of the pre-anæsthetic examination, as well as immediately before and after operation. In the present series, however, this was not always possible, owing to the shortage of sphygmomanometers and the scattered character of the hospital. The routine taking of blood pressure was therefore abandoned except when high spinal block was to be used or in unusual cases, as unless readings were taken before and after operation, little information of any value was gained. Routine blood pressure readings were never taken during the operation; they tend to frighten the patient as well as the surgeon and anæsthetist.

Ephedrine.

Ephedrine was given in all cases of high spinal block and in the early cases when mid or low block was to be used. It was given immediately before the spinal puncture and not before the patient left the ward, as that was found to be too variable a time in relation to the beginning of the anæsthesia. The dosage was 0·5 grain given intramuscularly. As was frequently the case with other drugs, till then regarded as quite indispensable, supplies of ephedrine several times came to an abrupt and unexpected end. In at least one-third of these cases it was not given, and although in the absence of controlled blood pressure recordings one cannot dogmatize about its value, it can be stated quite definitely that none of the patients in this series gave any anxiety from this point of view or appeared any the worse for not having had ephedrine.

One exception to this statement is a patient early in the series, whose blood pressure dropped at the end of ninety minutes' anæsthesia to 80 millimetres of mercury (systolic) and 60 (diastolic); sensation was lost to his clavicles. This man had had ephedrine, and no cause was found for his physical signs.

"Neo-synephrin hydrochloride",[7] chemically related to ephedrine, has been recommended as more satisfactory in the maintenance of blood pressure during spinal anæsthesia. Its action is said to be more prolonged, and it is held to be free from unpleasant side effects, such as precordial discomfort, cardiac arrythmia, and tachycardia, which were sometimes complained of in this series.

Observation of the Patient during Operation.

Rapport between patient and anæsthetist is of the greatest value, particularly during the early stages of the operation. With the modest dose of morphine and hyoscine a certain number of men came to the operating theatre a little nervous, either or being hurt, or of not being unconscious during the operation. It was always explained to the patient that complete abolition of all sensation was not intended, and would not, except in rare instances, take place—that he would feel the preparation of the part going on and possibly the incision, but that it would be painless. He would then be engaged in conversation about his unit, his home, or anything that might interest him, in order to keep his mind occupied. I feel that it is of the greatest importance that he should never be left by the anæsthetist at this stage. Most of the patients settled down quite happily when the operation had begun and was found to be painless. Many dozed off to sleep.

In the early stages of anæsthesia it was not uncommon for the patient to complain of nausea. Few vomited. If vomiting occurred, it was almost always during the first

few minutes after the spinal injection and was purely temporary. It may have been due to the fall in blood pressure resultant upon the paralysis of the vasoconstrictor fibres in the anterior nerve roots, or as has been suggested, to one of the side-effects of "Percaine". Nearly all patients had some degree of bradycardia, 50 or 60 beats per minute being almost a general pulse rate. In addition to this, pallor and sweating were not uncommon in the early stages, the whole picture being one of a mild vasovagal attack. I am unable to quote figures, but I have the impression that this state of affairs was more common in patients who had not had ephedrine.

Supplementary Narcosis.

In some instances patients complained of pain, particularly during traction on mesenteric structures as in a difficult appendicectomy or hernial repair. It is always a hard matter to assess this pain, as so much depends on individual reactions. In these cases the patient was always given the benefit of the doubt and some adjuvant to the anæsthesia was provided. In the early days small quantities of chloroform on an open mask were used, as the supplies of nitrous oxide were limited. The disadvantage about this was that it was apt to make muscular men restless and non-cooperative, and it was abandoned in favour of 0·25 grain of morphine given intravenously, which was most satisfactory. Of the 494 cases, morphine was given in 3·2% and chloroform in 1·4%. Ether was given in two cases in the series and nitrous oxide in one. In two cases morphine given intravenously was unsuccessful in relieving pain, and chloroform had to be given as well.

"Failed" Spinal Anæsthesia.

"Failed" spinal anæsthesia is the term used to describe one case in the series in which no signs of anæsthesia followed what was apparently an intrathecal injection of a 1 in 1,500 solution of "Percaine". This was for the removal of an acutely inflamed appendix. Puncture with the patient in the prone position was unsuccessfully attempted, but cerebro-spinal fluid dripped freely from the needle after puncture with the patient in the lateral position. Eleven cubic centimetres of the solution were injected in the usual manner, and the patient was postured for six minutes. Not only was there complete absence of anæsthesia as far as could be determined, but the abdominal muscles became rigid. The patient had to be anæsthetized with ethyl chloride and ether for the operation to be performed.

Two possible explanations may account for this. The first, and I think the more probable, is that the bevel of the needle was not completely inside the theca, and that the bulk of the fluid was injected into the extradural space, or if it was properly injected it did not reach the correct nerve roots owing to faulty posture.

The second explanation involves the term "rachi-resistance" used by Sebrechts to describe relative or absolute failure to respond to anæsthetic drugs used intrathecally. The postulation of this condition has always seemed to me comparable to invoking the supernatural, and I have felt inclined to attribute it to faulty technique. Black and Walters,[8] however, in reporting a series of 657 cases recently, describe two instances in which complete failure to respond to intrathecally administered anæsthetic agents occurred. In the first case three doses of "Decicain" at the one sitting, and in the other more than normal doses of "Duracaine", "Decicain", and a 1 in 1,500 solution of "Percaine", were given on successive occasions entirely without effect. Black and Walters quote Sebrechts as postulating a connexion between rachi-resistance and the sympathico-tonic type of patient on the one hand, and what he calls rachi-sensibility with the vagotonic type on the other, a familial incidence being operative in both types.

Post-Anæsthetic Treatment.

Patients were told on leaving the operating theatre that they were on no account to raise their head from the pillow until the following morning, except in cases in which Fowler's position was desired by the surgeon. They were, however, encouraged as far as was consistent with the surgical after-treatment to turn from side to side or onto their face. This was done with the twofold idea of increasing pulmonary ventilation and preventing discomfort and boredom from lying in one position for long periods at a time. They were given no pillow during this time and the foot of the bed was raised on ten-inch blocks.

Sequelæ.

Sequelæ were assessed by seeing the patient the day after the operation and later on if necessary. Inquiries were made first from the ward sister as to complaints possibly relating to the anæsthesia, and then the patient was seen. So far as possible no leading questions were asked, but a general inquiry into his subjective sensations during and after operation was made, and facts as to headache, backache, vomiting and sphincteric and other disturbances were elicited. If he had ever had another form of anæsthesia and therefore a standard of comparison, he was asked whether, if confronted with another operation, he would prefer spinal anæsthesia or not. In this series, 116 patients, so far as possible all who conformed to this standard, were asked the question. Of these, 85% said they would prefer spinal anæsthesia. The reasons given against the repetition of spinal anæsthesia were mostly complaints of incomplete anæsthesia. Another reason given by a small number was the dislike of knowing what was going on in the operating theatre.

Headache.

Headache is one of the most common sequels, and more than any other has militated against the popularity of this form of anæsthesia amongst the lay public. It is difficult to prevent in every case, and also difficult to relieve. In this series it was found to begin in from six to twenty-four hours after operation and in some cases it lasted up to a week, but never longer. It was usually frontal or retroorbital in distribution, but sometimes vertical or occipital. It was usually relieved by liberal doses of bromide and aspirin and a return to the post-anæsthesia posture, though it tended to recur.

Headache in this series has been rather arbitrarily classified as severe, moderate and mild. The term "severe" refers to that beginning at any time during the first twenty-four hours and lasting twenty-four hours or more, and being usually unrelieved by posture or drug therapy. It usually disappeared within a week. Of the 494 patients, 18 had severe headache, a percentage of 3·6. The term "moderate" is applied to that lasting twelve hours, or that of lesser severity and more easily affected by treatment. Of the 494 patients, 1·6% had this type of headache; 14% had mild headache.

The causation of this irritating sequel seems shrouded in mystery. Robb[9] makes the following statement about it:

> Its occurrence does not appear to be related to the size of the needle, number of punctures, drug injected nor type of operation. That it is due to hypotension following leakage of fluid through the hole in the theca seems denied by the absence of similar headache on other occasions when cerebro-spinal fluid leaks, for example, after decompression and laminectomy.

In this series it seemed to bear no relation to the difficulty of the puncture, occurring more frequently than not in cases in which anæsthesia was quite easy and entirely uncomplicated. Of the patients from whom blood-stained cerebro-spinal fluid was withdrawn—fortunately a very small number—only one had severe headache. Ward sisters seemed convinced that it occurred more often in the non-cooperative patient who refused to maintain the head-down position. Another possible factor was the routine use of morphine, which is well known as causing headache in a small proportion of people who are sensitive to it. A certain number of these patients were prone to headache apart from anæsthesia. Another important factor was, I am convinced, a psychological one. Many of these patients were in the ward for at least three weeks after operation and saw successive patients for whom spinal anæsthesia was given. It became a point of honour with

many whose trials were over to frighten prospective victims as much as possible. Those who were going to have general anæsthesia were assured that they would "put on an act" on returning from the operating theatre, and with the same gloomy satisfaction the others were often told that they would get a "terrific headache" after having a "big needle pushed into their back". This attitude was, of course, discouraged as much as possible, but it was difficult to combat. In this connexion it is interesting to note that Jarman[30] in his report of combined spinal and intravenous anæsthesia maintained that the incidence of headache was greatly diminished, partly because patients in many cases did not know they were going to have spinal anæsthesia.

Various writers have suggested the rectal use of hypertonic magnesium sulphate solution in the treatment of spinal headache, others a further lumbar puncture. These would seem to incriminate as causes raised intracranial pressure and meningeal irritation respectively. I can find no scientific evidence for either of these hypotheses, but I have never made a secondary lumbar puncture in any of the cases reported here. Most anæsthetists seem now to agree that the ætiology is uncertain and that the most satisfactory treatment consists of the liberal use of sedatives like bromide and aspirin with a resumption of the "lying flat" position. This has certainly been the case in this series.

Backache.

Backache was another relatively common but not very annoying sequel. Most patients seemed convinced that it was due to the post-anæsthesia posture, and this may well have been correct. When it is considered that there is complete relaxation of most of the muscles in the anæsthetized area, particularly those of the lumbar and sacral region, it is, I think, reasonable to postulate lack of normal support for the joints of the vertebral column, for periods up to four hours, resulting in pain. This pain was mostly lumbar in site, though it was sometimes thoracic and cervical; in the latter case the pain became continuous with that of an occipital headache. It was found to disappear as a rule with alteration in posture. It may be that the condition is due to meningeal irritation, as it was commonly found to be related to the site of puncture. If this was so, one would expect to find it in those cases in which puncture was difficult. As in the case of headache, however, it seemed more common in those in which no difficulty had been encountered. Possibly due to the same cause was somatic pain, which occurred in seven cases. This was mostly in the abdomen or one or other thigh and seemed to have the character of root pain; but it was never very severe and passed off within twenty-four hours. No interference with sensation or muscular power was detected. An interesting observation in this regard was the number of patients who complained of being "itchy round their navel" during the operation. This may have been due to the attenuated action of the drug on the uppermost segments affected, which were mildly irritated instead of being paralysed.

There was only one severe backache in the series—that is, one lasting for more than twenty-four hours; there were four of moderate backache and 79 (16%) of mild backache.

Vomiting.

Vomiting was an occasional sequel. It sometimes began in the operating theatre with retching associated with fall of blood pressure or traction on mesenteric structures. In other cases it began after the patient's return to the ward. In any case it was almost always transient, as only in two cases did it last overnight. In all, 6·4% of patients had some vomiting.

Another potential cause of vomiting is posture in the operating theatre. This applied particularly to those patients who had a high or mid-spinal block, when they were draped over sandbags or some other support; they sometimes used to complain that these "stuck into" them. Resumption of the supine position with the table slanting slightly downwards generally relieved the vomiting.

The use of morphine and psychological factors are also possible causes of vomiting.

Sphincteric Sequels.

The only sphincteric sequel of any consequence was post-operative delay in voiding urine, lasting up to thirty-six hours and occasionally longer. It occurred most frequently after such operations as repairs of herniæ and those involving the lumbar root distribution. This state of affairs is by no means unknown after general anæsthesia for similar operations. One patient had to be catheterized and subsequently developed a bladder infection. It was only then found that a similar occurrence had followed a previous spinal anæsthesia. Another patient had incontinence of fæces following a hæmorrhoidectomy. This caused no serious disability until a month after the anæsthesia, but it persisted in spite of a plastic operation on the *sphincter ani*, which was very relaxed. It is by no means certain that spinal anæsthesia was the sole cause in this case. Apart from these two cases, there were nine patients who had difficulty in micturition. Of these three had their bladders catheterized, three passed no urine spontaneously for more than thirty-six hours, and three had scalding or difficulty with micturition for several days. These also are conditions sometimes occurring after general anæsthesia.

Pulmonary Complications.

Pulmonary complications sometimes occurred after spinal anæsthesia. Of the total number of patients, 14 developed a cough within forty-eight hours. Pneumonic consolidation, mostly basal, was found in 1% of cases; in 1·4% there were physical signs of bronchitis, while in the remainder there were no physical signs. All these patients recovered within one week.

The factors concerned in these cases were various and if possible more difficult to disentagle than those influencing similar sequels to inhalation anæsthesia. Many of the patients had been in the desert until a short time before operation, and slight cough with sputum was not uncommon with the rank and file of soldiers. This was probably influenced by heavy smoking, which was the rule rather than the exception. Further, the beds were often crowded together, and droplet infection was more than a possibility. Another probable factor was the distance of the operating theatre from the wards and the varying climatic conditions. Limitation of pulmonary ventilation due to intercostal paralysis is undoubtedly a factor in the causation of atelectasis. None of the patients referred to showed signs of this condition.

Summary.

A series of 494 cases of spinal anæsthesia with a 1 in 1,500 solution of "Percaine" is reported in this paper.

There were no deaths. In 3·6% of cases severe headache occurred and in 1% pulmonary complications, mostly minor; there were two cases of serious sphincteric disturbance (one possibly not due to the anæsthesia), two cases of vomiting lasting up to twenty-four hours, and two cases of severe backache.

No case gave rise to any anxiety in the operating theatre.

Of the total number of patients, 6·6% were given some adjuvant to the anæsthesia, most commonly morphine administered intravenously.

One hundred and sixteen patients had had some form of inhalation anæsthesia previously and therefore some standards of comparison. Of these 85% decided in favour of spinal anæsthesia if confronted with the necessity of further surgical operations.

One case of "failed" spinal anæsthesia is described.

Conclusions.

Safe and satisfactory anæsthesia with a 1 in 1,500 solution of "Percaine" can be used for a wide range of surgical procedures under conditions which obtain in a military hospital of this type.

The value of this preparation is none the less because almost all the patients were males in good physical condition, as distinct from a wider range of age, sex and clinical condition such as would be met with among patients in civil practice.

This anæsthetic solution provides what no other preparation has so far been shown to do—flexibility of purpose, allied to duration of anæsthesia.

Other drugs, such as "Stovaine", "Novocain" with its numerous synonyms, and the heavier preparations of "Percaine", are possibly more convenient for special procedures; but there is nothing they can do which cannot be done by a 1 in 1,500 solution of "Percaine".

Much time has been saved and much inconvenience avoided by the use of spinal anæsthesia; it permitted the carrying on of two and sometimes three operations at once.

Acknowledgements.

I wish to take this opportunity of giving my most sincere thanks to the surgeons of the 2/1 Australian General Hospital for their unvarying enthusiasm and cooperation, and also to the operating theatre sisters and orderlies, without whose energetic assistance the induction of this form of anæsthesia would have been much more difficult. I should like also to acknowledge the kindness of Major-General S. R. Burston, Director-General of Medical Services, who has given permission for the paper to be published.

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THE TIME REQUIRED FOR THE EGGS OF THE BODY LOUSE (PEDICULUS HUMANUS CORPORIS DE GEER) TO DEVELOP AND HATCH AT DIFFERENT TEMPERATURES.

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THE body louse lays its eggs in the seams and folds of the undergarments of an infested person. The temperature and humidity at the surface of the body ensure that the eggs are in an environment favourable for their development. Under these conditions, when the clothes are worn continuously, the eggs may develop and hatch in about nine days.

If clothing infested with the eggs (nits) of body lice is left in a room, the eggs will develop if the temperature and humidity of the air are suitable. They will not develop completely and hatch at ordinary room temperatures (say about 60° F.), but they may remain viable for two or three weeks; they will undergo development and hatch when they are placed again at a favourable temperature.

H. S. Leeson (1941) carried out experiments to obtain information about the effect of temperature and humidity on development and hatching of the eggs of the body louse. Leeson found that changes in the humidity of the air did not influence the duration of the incubation period of the eggs; but the mortality of the developing embryos increased when the eggs were kept in air of extremely high or low humidity. The average time required for the eggs to develop and hatch was obtained at six constant temperatures (Table I); the eggs were placed at the temperatures stated, within twenty-four hours of being laid. Leeson found that the eggs will not undergo complete development and hatch at 38° C. (100·4° F.) or higher, nor at 23° C. (73·2° F.) or lower. Therefore, from the information given in Table I, the range of temperature at which complete development to hatching can occur may be taken as extending from 23·5° C. (74·3° F.) to 37·5° C. (99·5° F.). At the upper and lower limit of this range there is a marked increase in the mortality of the eggs (Table I, fourth column). The temperature at which the eggs develop completely and hatch in the shortest time lies between 35° C. and 37° C.: it may be placed tentatively at 36° C. (96·8° F.). This is the "peak" temperature (Davidson, 1942): above this temperature development is retarded or inhibited.

It is seen from the table that the average incubation period of the eggs is 7·5 days at 32° C. Therefore, the average speed at which the embryo develops at this temperature may be expressed as 13·33% of its total development per day. Values for the average speed of embryonic development at the six stated temperatures are given in the last column of the table. I have fitted these values to a curve having the following formula:

$$\frac{100}{y} = \frac{27{\cdot}7}{1 + e^{5{\cdot}24357 - 0{\cdot}16232x}}$$

This curve shows the relation of the velocity of development of the eggs to temperature. $\frac{100}{y}$ represents the average amount of development of the embryo which goes on per day at a given temperature x, expressed as a percentage of the total development. The application of this type of curve to the development of insects has been discussed by Davidson (1942). The curve shown in Figure I has been

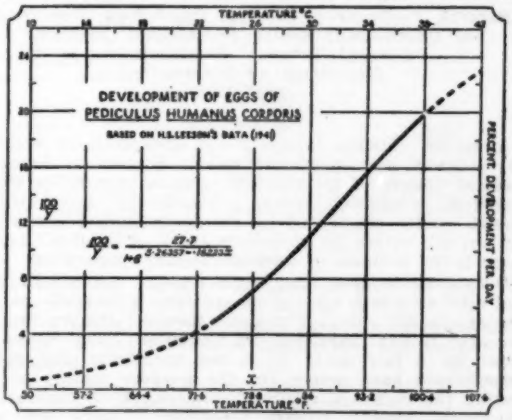

FIGURE I.
Calculated curve showing average speed of development of the eggs of the body louse at temperatures between 23·5° and 36° C.

calculated from the foregoing formula. The observed values for $\frac{100}{y}$ at the five constant temperatures 24° to 35° C., shown in the last column of Table I, are a good fit to the calculated curve. The greatest deviation of the observed points from the calculated curve is 0·46 at 29° C., which is 4·6% of the calculated value at this temperature. The root-mean square-deviation of the five observed values is 0·242, which is 2·42% of the calculated value at 29° C.

TABLE I.

Showing the Observed Time Required for the Eggs of the Body Louse to Develop Completely and Hatch at the Six Given Constant Temperatures. The table is based on data obtained by H. S. Leeson.

Temperature.		Number of Eggs Used in Experiment.	Number of Eggs Hatched *per Centum*.	Incubation Period in Days.		Average Percentage Development per Day.
Degrees Centigrade.	Degrees Fahrenheit.			Range.	Average.	
24	75·4	120	11	17 to 21	18·0	5·56
26	78·8	381	44	13 to 19	14·5	6·90
29	84·2	438	88	9 to 11	9·5	10·53
32	89·6	471	73	7 to 9	7·5	13·33
35	95·0	379	45	5 to 7	6·0	16·67
37	98·6	269	9	6 to 7	6·0	16·67

The time required for the eggs of the body louse to develop completely and hatch at temperatures between 23·5° C. and 36° C. can be obtained from Figure I, by dividing into 100 the value on the ordinate $(\frac{100}{y})$ at any given temperature (x). For example, at 29° C. the value on the ordinate is 10·07; therefore the incubation period of the eggs at this temperature is 9·93 days.

The reader is referred to Leeson's paper for an account of the effect of various temperatures on partially developed eggs of the body louse.

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THE PROBLEM OF RETURNED SOLDIER ORGANIZATIONS.

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A REPORT entitled "Helping the Incapacitated Soldier" has recently been published by the Society of Returned Medical Officers of Queensland. I have been asked by its president to discuss certain psychological aspects which, though partly considered by the investigating committee, did not fall within its immediate ambit of inquiry. Among these is the problem of returned soldier cooperation.

Organizations and associations, great and small, wide and circumscribed, are legion and form a valuable part of our community life. The most frequent motive force is the urge to fight injustice and hardship. They reflect the quest for a fair deal. It is not surprising that strong associations have arisen for the purpose mainly of protecting the rights of returned soldiers. Both general and individual aspects receive attention. There are wide associations such as the Returned Sailors and Soldiers' Imperial League of Australia, the British Legion, the Ex-Imperial Service Association and the Diggers' Association of Queensland, whereas the Limbless Soldiers' Association and the Tuberculosis Association supply more specific needs. All have served and are serving a useful purpose. I wish to show that the virtues of such organizations may have serious consequences and to suggest a reform which will largely eradicate this possibility and enhance their prestige and utility.

Our first problem is one of simple psychology. The soldier wants justice; but he often fails to see that he wants it from "the State", of which he is himself a member. He "identifies and projects" injustices on a friendly section of the community. It is simple to regard justice as something to be secured by fighting a "department" or possibly a particular doctor or other official. That the department, the doctor and the official are fighting the soldier is an obvious secondary elaboration. The practice of taking sides, whether in war, politics, local government, business (capital *versus* labour) or sport, is ingrained in us. Association of ideas suggests to the returned soldier an obvious application. He must fight a department and the Government for his rights. Now observe the implication. The idea "fight" has a definite meaning for the soldier. The lessons of warfare are clear. They involve the forceful use of "all-in" effort, right or wrong, the employment of force, evasion and guile. It is a lamentable fact that the returned soldier suffers from the same handicaps as his civilian brother. Perfect health is a rarity in almost every member of the living species. There are minor disabilities of all types affecting "digestion", "nerves", "heart" *et cetera*, causing sundry aches, pains, tiredness and so forth. Actually such occurrences are unimportant, but they achieve a new significance when viewed in the "association mirror". Here is an example. A soldier suffering from fibrosis due simply to advancing years, says: "As I hitch up my trousers and get a stab in the back, it makes a fellow think. It might be due to war service—it might be the start of paralysis. They [meaning the enemy, that is, the department] will want to knock me back. I must see my 'cobbers' in the association." The fight is on. The "cobber" in the association does what every good soldier will do. He stands four-square behind his mate, gathers evidence, places it to the best advantage and uses his initiative to confound the enemy. He says the condition may be due to war service, and therefore makes every effort to prove that it is.

The Size of the Problem.

The isolated example quoted above must be multiplied a thousandfold. Today the fight is beginning. Next year will usher in an unceasing battle for rights, and as increasing age magnifies symptoms, there will be a steadily mounting rise in number of the pension and benefit hunters. It is not inconceivable that the good offices of all associations (for they are not confined to the returned soldiers) will produce total benefits which will tax the financial resources of the Commonwealth. This contingency, however, is of less importance than the production of increased human suffering. The patient fears disease. As the Society of Returned Medical Officers of Queensland points out: "Finally, if he is unlucky enough to get a pension, his fears are confirmed; he is now sure of his disease, and subconsciously afraid that if he loses his pension he may be left as a nervous cripple to find unaided economic security in a hard, bitter world."

The Remedy.

Any reader laying the blame on the soldier and his associations has missed the crux of the argument; they are blameless, in the sense that they are enmeshed in a vicious circle of normal psychology for which they are not responsible. The extent to which the State or a State department may be regarded as an enemy by any individual is largely based on the attitude of the State or

department itself. Has it inspired confidence, has it achieved a burning spirit of mutual cooperation? Or does the State or department represent just a rubber stamp, a tangle of red tape, or an impersonal authority hundreds or thousands of miles away?

It is not sufficient to rest on the laurels of good intentions or even good deeds. The average man bases his opinions on emotion rather than on critical judgement. To offset this tendency, departments and State must go more than half-way to meet Mr. Manstreet, who is the soldier of yesterday. He must be shown what is being accomplished, he must be given ideals, he must be asked his opinions and allowed to vent his criticisms, he must be educated in the art of cooperative living so that instead of thinking that his department is his enemy, he realizes that it is a friend and accepts it in an overriding sentiment which includes his "cobbers" and the rest of his war memories.

The Committee of the Society of Returned Medical Officers of Queensland makes the following comment:

Australia is a land of vast distances, therefore in all Repatriation activities, except matters of policy and finance, there should be as much decentralisation as possible. This would necessitate closer co-operation between the Repatriation Officials and the Soldiers' Organisations. The purpose of this should be the continued education of the soldier in the functions of the Repatriation Commission and the opportunities for his betterment.

That the Department of Repatriation has visualized this problem is shown by its provision of machinery for local committees. Their constitution and administration are outlined in Section 49 of the act passed in 1917, and they have been amended from time to time.

The Repatriation Commission in February, 1942, published an interesting booklet entitled "Instructions for the Guidance of a Repatriation Local Committee". In a preface by J. Webster, Acting Chairman, there is the following significant statement:

Service and sacrifice go hand in hand during the days of war and the twofold purpose of a Local Committee should be to ensure that men who have served and suffered during a time of national stress, and their dependants as well, are in a position to taste the pleasures of peace and are not left to feel that the community's interest in them ceased when they re-entered civilian life.

In actual practice little has been done to implement the statutory machinery. Here and there ex-soldiers' committees have done useful work, but they are few in number. It is the commendable practice for a single high-ranking repatriation officer to attend at returned soldier conferences; but such activities do not solve the problem of the "enemy complex". Lasting enthusiasm cannot be kindled by a lone talk. This result will be achieved only when the associations feel that they are an integral part of the ex-soldier repatriation machinery. It can arise only when there are regular, official, widespread and large-scale conferences between department and ex-soldier associations.

There is an axiom that mutual understanding arises only after frequent meetings; these give opportunity for the realization of mutual problems and difficulties. The principle is equally true for individuals and associations. The Department of Repatriation is recommended to inaugurate a system of regular regional, State and Commonwealth conferences. It must be emphasized that the scheme entails no change in the executive machinery of the Department of Repatriation; it is introduced solely because, for the sake of cooperation between the department and ex-soldier associations, the Commonwealth must be divided into regional areas dependent not upon State boundaries but upon population and transport facilities.

The Plan for More Effective Cooperation.

Instead of placing reliance on local committee and association meetings, those responsible in each regional area will hold an annual conference, to which will be invited representatives from all soldier organizations and such other bodies as may be determined. Attending the conference will be the representatives of public departments which deal with such matters as education, housing, health and allied community activity. The business of the conference will be discussion of all ex-soldier problems, addresses by informed speakers, and demonstration of interesting material such as training methods, homes, buildings *et cetera*. These will "dovetail", to act as illustrations and to inform the ex-soldier that he is an integral member of a well-coordinated communal plan.

The conference will elect members to the State conference. Travelling concessions will be given to all official delegates to conference. The machinery for calling and arranging conferences will consist of an advisory council, in which both department and association participate. Each State will hold an annual conference on the same lines as that of the regional conference; to it should come delegates from all regional areas. The venue of the State conference will change from year to year. This arrangement will give additional publicity and enable the rank and file of regional members to visualize the State-wide activity of the department. As the conference will be held at a favourable climatic season, there will be an encouragement in normal times to capitalize the convivial holiday spirit.

To the Commonwealth annual conference will come delegates from all State conferences, together with representative State and Commonwealth officials. The venue will change from year to year. The advantages of this have been outlined in connexion with the State conferences. It is presumed that in the Department of Repatriation research will be encouraged. The conferences will be a valuable means of presenting and encouraging such knowledge and for the acquiring of further knowledge.

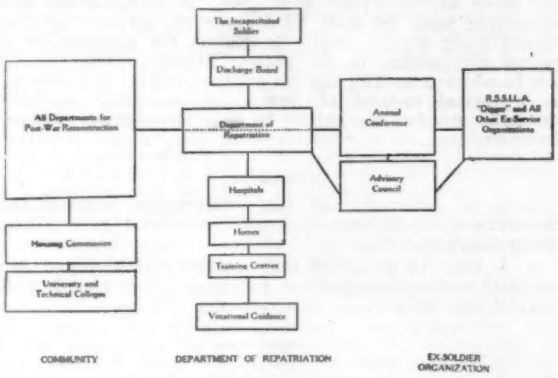

FIGURE I.

Scheme illustrating the relationship of the incapacitated soldier to soldier organizations, departments of repatriation, department of reconstruction and the community.

Comment.

The foregoing suggestions have formed the basis of many discussions between returned soldiers. In the opinion of the writer the benefits outweigh disadvantages. Criticism has chiefly centred around the aspects now to be discussed.

Administrative Difficulties.

A critic has drawn attention to administrative difficulties. This largely arises out of a misconception, since conferences have no administrative power, but are purely educational and advisory. It is, of course, obvious that conferences entail difficulties in organization; but these are mere elementary problems to a large and experienced Commonwealth department.

Executive Difficulties.

It is maintained that as the conferences are purely advisory and consultive, no executive difficulties will ensue. Actually administration will be easier because of better cooperation.

Cost.

From 1916 to 1940, war pensions have cost Australia £164,000,000. Are we to cavil at the expenditure of a few paltry thousands devoted to the creation of goodwill? Actually, conferences will be an investment, since they will promote efficiency.

Continuity.

A critic has said that the running of conferences will mean an increase in the staff. This is true, and must be counted as the price of progress. It will be necessary to have a permanent liaison between conferences, returned soldier organizations and the Department of Repatriation. This can be accomplished through the establishment of the advisory council already mentioned and elected by conference. This should deal with all interconference matters, and will arrange the ensuing conference. Secretarial assistance should be a responsibility of the Department of Repatriation.

Complacency.

It is said that the present methods of returned soldier cooperation have achieved a working measure of success which could not be improved. It must be clearly understood that this proposal to increase ex-soldier cooperation in no sense implies a destructive criticism of procedure in the Department of Repatriation. Admirable results have been achieved under difficult conditions. It is suggested that every form of administration, however admirable, can be improved by change in details. As one listens to the story of the "pension-minded", it is apparent that something must be done to counter the adverse psychological state which results in claims for pensions of a nature detrimental to the patient himself. The remedy lies in education. The scheme outlined earlier is suggested as a logical method of harnessing ex-soldier goodwill through simple measures leading to better mutual understanding.

Summary.

1. It is inferred that the relationship between the Department of Repatriation and ex-service associations needs overhaul.

2. A plan is proposed for Commonwealth, State and regional conferences and the inauguration of an advisory council for the purpose of continuity.

Reports of Cases.

GASTRO-JEJUNO-COLIC FISTULA.

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(From an Australian General Hospital.)

Clinical Record.

J.S., aged fifty-eight years, consulted me for dyspepsia, anorexia, loss of weight and diarrhœa. Seven years previously he had undergone gastro-jejunostomy for relief of duodenal ulcer; the surgeon (now deceased) had a well-deserved national reputation. Symptoms had been absent till three months prior to the patient's reexamination. In appearance he was thin, but not emaciated. Physical examination revealed no abnormality. The provisional diagnosis of jejunal ulcer was made.

Whilst awaiting X-ray examination, he vomited a pint of fæcal-smelling fluid. The presence of fistula was then suspected. After he had spent five days in hospital, the X-ray examination after a barium meal revealed a well-acting stoma, an active duodenal ulcer and no evidence of fistula. Even though the X-ray examination revealed no evidence of fistula, this diagnosis had to be persisted in, and another X-ray examination after a barium enema was carried out. The meal travelled without obstruction to the mid point of the transverse colon, and then suddenly filled the stomach.

Operation was agreed upon. Preliminary caecostomy was performed to avoid later tension on any colonic repair. Six days later, under nitrous oxide and oxygen anæsthesia, the upper part of the abdomen was opened. A fistulous junction between the transverse colon and the jejunum proximal to the stoma was discovered. After separation of these two bowel segments, in each an opening two centimetres in diameter was found. There was no evidence of ulcer on the stoma. The retrograde fæcal pathway had been from colon to jejunum, thence through stoma to stomach.

The opening in each bowel segment was closed, but there was an adjacent angle between these sutured lines which could not be widely separated, owing to nearness of stoma and shortness of transverse mesocolon. Into this angle a piece of omentum was stitched to prevent reapproximation of the jejunum and the colon. So much for the fistula.

It was now necessary to provide more thorough relief of the original duodenal ulcer and lessening of the acid traffic past the repaired "fistula". Gastric exclusion after the manner of Devine was performed. The stomach was divided obliquely from lesser to greater curvature and the distal half was closed. The jejunum distal to the stoma was then united to the proximal half of the cut stomach; this union was made in the manner of Hofmeister (as advised by Frank Lahey), and was necessarily ante-colic.

The caecostomy closed in eight days. Convalescence was stormy and was accompanied by chest complications, but ultimate recovery was complete.

Summary.

1. A case of gastro-jejuno-colic fistula is reported. Such cases are uncommon. The anæsthetist, a senior man of twenty-five years' experience, had not previously seen a gastro-colic fistula, much less one of this type.

2. A form of treatment as carried out is suggested. It is less lethal than the wider excisions, and such patients, who are already very ill, will not survive long operations.

3. The cause of this particular fistula is obscure. As the original stoma was very close to the transverse colon on the right side, owing to shortness of the mesocolon, it is suggested that the approximated bowel segments, having been in contact for seven years, ultimately ulcerated into each other.

A CASE OF ACUTE HÆMOLYTIC ANÆMIA CAUSED BY SULPHANILAMIDE.

By B. C. Eglitzky,
Orange, New South Wales.

C.K., aged five years and eleven months, was first examined on November 27, 1942, complaining of left earache. He had had measles three months previously, but now appeared a normal, healthy child, though somewhat pale. Slight otitis was present on the left side. His temperature was 100° F. and his tonsils were a little inflamed. Sulphanilamide was prescribed, one tablet *statim*, and half a tablet to be taken every four hours. Spirit ear drops were also given.

After twenty-four hours the pain had subsided from the left ear, but had appeared on the right side; slight mastoid tenderness was present. The ears appeared normal, and the child's temperature was 100° F. This continued for three days, the temperature remaining constant around 100° F., with headache and right mastoid tenderness; but there was no redness or swelling in this region. Examination of a throat swabbing revealed hæmolytic streptococci.

On December 1 a change in the patient's colour was noted. His temperature rose to 102° F. The question of operation was debated. Sulphanilamide treatment was discontinued for twenty-four hours. On December 2 a blood count gave the following information: the red cells numbered 3,670,000 per cubic millimetre, the hæmoglobin value was 44% and the colour index was 0·6; the white cells numbered 20,600 per cubic millimetre, with normal distribution.

The patient was admitted to hospital. His temperature settled to normal, but rose again that night to 102° F., and sulphanilamide treatment (half a tablet every four hours) was reintroduced for twenty-four hours. On December 3 the pallor was much increased, but no other change was noted. Sulphanilamide treatment was completely suspended. On December 4 a further blood count gave the following information: the red cells numbered 1,540,000 per cubic millimetre, the hæmoglobin value was 24% and the colour index was 0·8; the white cells numbered 19,600 per cubic millimetre; in the film fairly numerous normoblasts were seen.

Despite this sudden drop in the number of red blood cells, the patient's general condition was good. The mastoid symptoms had completely subsided, he was asking for food, and elimination was aided by purgatives and an enema. Intramuscular injections of "Neo-Hepatex" were given; the first dose was four cubic centimetres, and this was followed by two cubic centimetres per day for five days, then twice a week. *Syrupus Ferri Phosphatis Compositus* one drachm was also given three times a day.

On December 6 a blood count gave the following information: the red cells numbered 2,000,000 per cubic millimetre, the hæmoglobin value was 34% and the colour index was 0·8; the white cells numbered 16,900 per cubic millimetre. On December 8 the red cells numbered 2,300,000 per cubic millimetre, the hæmoglobin value was 37% and the colour index was 0·8; the white cells numbered 15,000 per cubic millimetre.

From this point improvement was rapid. The patient was discharged from hospital on December 16. The latest blood count, carried out on January 5, 1943, gave the following information: the red cells numbered 4,600,000 per cubic millimetre, the hæmoglobin value was 90% and the colour index was 0·98; the white cells numbered 14,000 per cubic millimetre.

A CASE OF FŒTAL ASCITES.

By J. W. CLAYTON and R. MUNRO FORD,
Adelaide.

THE following case of ascites of unknown origin in a seven months' fœtus seems worthy of record.

One of us (J.W.C.) was called on August 28, 1942, to see a married woman, aged twenty-one years, who was seven months pregnant. The labour caused no difficulty at all, which was remarkable in view of the size of the fœtus.

A post-mortem examination was performed by R.M.F., the findings being as follows. The fœtus weighed 55 ounces; 28 ounces of fluid were withdrawn from the peritoneal cavity. An imperforate anus was present. The brain of the fœtus was soft and the pituitary gland was normal. Further tests on the fluid obtained from the peritoneal cavity revealed it to be a typical transudate. The liver, spleen, kidneys and heart showed evidence of congestion. Thus generalized œdema and ascites are the only clue to the cause of death.

The enormous amount of fluid and the compressed nature of the organs resulting from this lead us to consider the cause of death to be pressure on the vital parts by the coexisting ascites, this state of affairs leading to dysfunction and finally to cessation of function of the parts involved.

Reviews.

YEAR BOOKS IN MEDICINE AND ITS BRANCHES.

THE books published in the "Year Book" series are well known to medical practitioners. They are valuable for several reasons, the most important probably being the devotion of a volume to each of the special subjects in medicine. A practitioner whose practice is concerned exclusively with one subject, can buy every year the volume covering that subject, and he will always have at his elbow a means of refreshing his memory on recent work. On the other hand, many will find it useful to keep more than one of these volumes on their shelves. It will, of course, be clear that these volumes are not devoted entirely to new work; were this so, it would be more than remarkable that all of the volumes are almost equal in size and do not vary a great deal in their number of pages from year to year. The books do contain references to new work, but they also contain a review of the year's literature in a special subject. The editors of these volumes make a selection from journals available to them and record the views and findings of different authors. When it seems desirable they conclude the account of an author's work with a short editorial observation, generally calculated to allow the reader to see the work under discussion in its proper perspective. In the present instance, reference will be made to several of these volumes.

"The 1942 Year Book of General Medicine"[1] is edited by G. F. Dick, J. B. Amberson, G. R. Minot, W. B. Castle, W. D. Stroud and G. B. Eusterman. G. F. Dick devotes 126 pages to the section on infectious diseases, and states that he has paid special attention to the work bearing on war medicine, including tropical diseases. Special reference may be made to the sections on encephalitis, infectious jaundice, malaria and scarlet fever. An important section is devoted to chemotherapy of infectious diseases. In the section on diseases of the chest (excluding the heart), J. B. Amberson devotes a great deal of space to tuberculosis. He has a section on trauma by blast injuries, war gases and gunshot wounds, and deals at length with the pneumonias. In relation to the pneumonias, mention is made of the popularity of sulphadiazine in America, to the use of a new derivative, sulphamethazine described by English workers, and to yet another derivative, irgamid, described by a Swiss worker, Markoff. In the section on diseases of the blood and blood-forming organs, and diseases of the kidney, G. R. Minot and W. B. Castle deal with anæmias, infectious mononucleosis, purpura, and so on. The subdivision on diseases of the kidney is concerned with the ætiology, clinical aspects and treatment of kidney disease. There is also a discussion on the relationship between the kidney and hypertension. In the section on disease of the heart and blood vessels, W. D. Stroud deals with hypertension, the anginal syndrome, the peripheral blood vessels and so on. The articles on electrocardiology contain references to the use and abuse of the electrocardiogram, and to the fallacies in the application of clinical electrocardiography. The last section of the book deals with diseases of the digestive system and metabolism; it is well handled by G. B. Eusterman. Diseases of the stomach and duodenum, disease of the biliary tract and pancreatic system, and disease of the intestinal tract are considered separately. There is a special subsection on diseases of metabolism and nutrition.

"The 1942 Year Book of Industrial and Orthopedic Surgery" is edited by Charles F. Painter.[2] It is divided into two sections according to its titles. The orthopædic part of the book is by far the larger. In the introduction to this first part the editor writes that there need be no real grounds for conflict between the traumatic surgeon and the orthopædic surgeon. He holds that no one who aspires to practise orthopædic surgery should do so unless and until he is a competent general surgeon. He adds that anyone practising traumatic surgery must be skilled in certain procedures of the orthopædic specialist. With these views we are in hearty agreement. Sections in the orthopædic part of the book are devoted to such subjects as tuberculosis of bones and joints, osteomyelitis, paralyses, chronic arthritis and gout, benign and malignant tumours, congenital defects and pathological conditions, lesions of the upper extremities, lesions of the spine, fractures and traumatic dislocations, operative and diagnostic procedures. The reader is surprised to find that the part of the book devoted to industrial medicine and surgery is small. It covers only 50 pages, and only two pages deal with articles on prevention. Surely it is time that more attention was paid in medical literature to this aspect of the subject. The present scanty reference is not to be credited to C. F. Painter, but to orthopædic and other surgeons whose work he has to summarize.

[1] "The 1942 Year Book of General Medicine", edited by George F. Dick, M.D., J. Burns Amberson, junior, M.D., George R. Minot, M.D., S.D., F.R.C.P. (Edinburgh and London), William B. Castle, M.D., S.M., M.D. (Hon.), Utrecht, William D. Stroud, M.D., George B. Eusterman, M.D.; 1942. Chicago: The Year Book Publishers, Incorporated. 7¼" × 4¾", pp. 848, with illustrations. Price: $3.00, post paid.

[2] "The 1942 Year Book of Industrial and Orthopedic Surgery", edited by Charles F. Painter, M.D.; 1942. Chicago: The Year Book Publishers Incorporated. 7¼" × 5", pp. 424, with many illustrations. Price: $3.00, post paid.

"The 1942 Year Book of General Surgery" is edited by Evarts A. Graham.[3] He states in the introduction that during the past year much of the surgical literature has been devoted to war wounds, and that most of the articles contain nothing essentially new. The opening section deals with anæsthesia and analgesia, and this is followed by a chapter on asepsis and antisepsis in which the amazing substance known as penicillin is discussed. This substance was discovered by Alexander Fleming and described in the *British Medical Journal* of September 13, 1941. Reference is also made to observations by Abraham and others on the growth and production of penicillin. Under the heading of "Military Surgery", war wounds and burns are discussed. Some observations on soldiers wounded in the Spanish civil war are recorded, and reference is made to the emergency treatment of war wounds and the treatment of compound fractures. The findings of the subcommittee on amputation of the War Wounds Committee of the Medical Research Council of Great Britain are set out. Under the heading of "Burns" reference is made to the article by B. K. Rank that appeared in April, 1942, in *The Australian and New Zealand Journal of Surgery*. In the chapter on wound healing reference is made to the effect of temperature on the healing of experimental wounds in dogs. The editor states that this has an important bearing on the recent advocacy of the therapeutic use of the principle of refrigeration of tissues. He adds that this would seem to be dangerous in the presence of infection and that the absence of an inflammatory reaction should indicate probably an unfavourable rather than a favourable effect. The chapters on the scalp and the skull and the brain and the meninges are short but interesting. Useful reference is made to war wounds of skull and brain, and also to an analysis of 53 cases of apparently trivial head injuries. The chest, as might be expected, receives a good deal of space. The subjects covered range from bronchiectasis in childhood to newgrowth of the lung and pulmonary tuberculosis. The general practitioner will find a good deal to concern him in the chapter on the vermiform appendix, and the chapters on the liver, the gall-bladder and the pancreas will be of interest to all general surgeons.

"The 1942 Year Book of Obstetrics and Gynecology", edited by J. P. Greenhill,[4] is dedicated to the memory of Joseph B. DeLee, who died in April, 1942, and Greenhill has written an introductory chapter on DeLee's life and work. The part of the book on obstetrics is divided into sections that deal in turn with pregnancy, labour, the puerperium and the newborn. Important sections deal with anæsthesia and analgesia in labour, and reference is made to articles which discuss barbiturates, scopolamine, chloral hydrate, "Dial Urethane", "Evipal Sodium" and vinethene. Reference is also made to spinal anæsthesia for Cæsarean section; the editor is justly sceptical as to its real value. The part of the book dealing with gynæcology is divided into appropriate sections. One of the most important, covering approximately 60 pages, deals with endocrinology. This is a subject with which every medical man or woman practising gynæcology should be conversant.

"The 1942 Year Book of Urology" is edited by Oswald S. Lowsley.[5] It is divided into several parts, dealing with general considerations, the kidney and adrenal, perinephric and paranephric conditions, the ureter, the bladder, transurethral operation, the prostate, the genitalia and gonorrhœa. The first of these sections is perhaps the most interesting. It deals with a variety of conditions, from anuria following the use of sulphadiazine to enuresis, and from the treatment of urinary infections to anæsthesia suitable for urological procedures. The use of hormones in cryptorchidism is mentioned, and their use in prostatic hypertrophy is discussed. Complete prostatectomy is mentioned and several authors are quoted as having dealt with the treatment of inoperable carcinoma of the prostate. The section on gonorrhœa is most important. The results of a ten-year study of the disease in the United States Navy are presented, and bacteriological diagnosis is discussed. Several pages are devoted to the treatment of gonorrhœa by chemotherapy; the experience of several authors is recorded, and this section of the book alone makes it worth while to any practitioner.

"The 1942 Year Book of Pediatrics" is edited by I. A. Abt and A. F. Abt.[6] It is divided into 23 sections. The first, dealing with the newborn, has reference to *asphyxia neonatorum*, vitamin *K*, *ductus arteriosus*, and other conditions. The section on nutrition and vitamins is important, particularly at the present time when the exigencies of war make it necessary to pay special attention to the food of children. In the section on diseases of the blood, several references are made to the interesting condition known as erythroblastosis. Under the heading of respiratory diseases, bronchiectasis in childhood is mentioned, and both pneumonia and asthma are discussed. As might be expected, several references are made to sulphonamides in the treatment of the pneumonia of children. The section on nervous and mental diseases shows how increasing attention is being paid to the psychological problems of children. In the sections on bones and muscles full reference is made to observations by Flecker, of Cairns, on the time of appearance and fusion of ossification centres observed by radiological methods. In a section devoted to miscellaneous considerations, some of the unattained objectives of pædiatrics are discussed, and the present position of the specialty is estimated. Pre-school children and kindergarten children in wartime and school health problems in wartime also receive mention.

"The 1942 Year Book of General Therapeutics" is edited by O. W. Bethea.[7] This is a volume that should be in the hands of every practitioner, be he physician, surgeon, specialist, or engaged in general practice. The book is divided into seven main sections and many subsections. Extensive reference is made to drugs of the sulphonamide series, and the subject of burns is mentioned at some length. Blood transfusion, too, is discussed in the light of numerous contributions to the literature. The subsections on hormones and vitamins are very valuable. Of the individual drugs discussed, two only will be mentioned. The editor protests against the more or less routine use of benzedrine in the presence of normal fatigue "to whip up the vital resources in an effort to carry on for a few hours longer". He notes that this is becoming a common practice, especially among medical practitioners. He then goes on to record observations by several authors on the use of benzedrine in migraine, in spasmodic torticollis, in chronic alcoholism, and in epilepsy. He thinks that in these spheres the drug may eventually prove valuable. He also refers to dicoumarin, an anticoagulent, with which, he states, a new therapeutic field is possibly made available. This drug is prepared from clover and prolongs the coagulation and prothrombin time of blood.

"The 1942 Year Book of Dermatology and Syphilology" is edited by F. Wise and M. B. Sulzberger.[8] In the introduction, the editors state that they have devoted as much space as possible to problems accentuated by the war. The first section is a long one on the treatment of burns. It is based on sixteen articles from the literature, and two additional references are given at the end. It will be noted that the subject of burns is referred to in several of these year books. This happens also in regard to certain other subjects, and is not surprising. Some persons may regard this spreading of such subjects and reference to them in several volumes as a weakness, but others again will not hold this view. Medicine can never be divided into watertight compartments, and when the special branches of medical science are discussed in separate volumes this division is unavoidable. In this volume allergy, eczema and dermatitis are discussed together and more than 50 pages are devoted to them. This section is followed by an interesting though smaller section on drug eruptions. The most important section of the book is probably that devoted to syphilis and its treatment; this occupies more than 130 pages.

[3] "The 1942 Year Book of General Surgery", edited by Evarts A. Graham, A.B., M.D. Chicago: The Year Book Publishers. 7¼" × 5", pp. 848. Price: $3.00, post paid.

[4] "The 1942 Year Book of Obstetrics and Gynecology", edited by J. P. Greenhill, B.S., M.D., F.A.C.S.; 1943. Chicago: The Year Book Publishers, Incorporated. 7¼" × 4¾", pp. 672, with illustrations. Price: $3.00, post paid.

[5] "The 1942 Year Book of Urology", by Oswald S. Lowsley, M.D., F.A.C.S.; 1942. Chicago: The Year Book Publishers, Incorporated. 7¼" × 5", pp. 456, with illustrations. Price: $3.00, post paid.

[6] "The 1942 Year Book of Pediatrics", edited by Isaac A. Abt, D.Sc., M.D., with the collaboration of Arthur F. Abt, B.S., M.D.; 1943. Chicago: The Year Book Publishers, Incorporated. 7¼" × 4¾", pp. 512, with illustrations. Price: $3.00, post paid.

[7] "The 1942 Year Book of General Therapeutics", edited by Oscar W. Bethea, Ph.M., M.D., F.A.C.P.; 1942. Chicago: The Year Book Publishers, Incorporated. 7¼" × 5", pp. 512, with illustrations. Price: $3.00, post paid.

[8] "The 1942 Year Book of Dermatology and Syphilology", edited by Fred Wise, M.D., and Marion B. Sulzberger, M.D. Chicago: The Year Book Publishers, Incorporated. 7¼" × 5", pp. 664, with illustrations. Price: $3.00, post paid.

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References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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THE MALARIA PROBLEM IN AUSTRALIA.

THE letter by Dr. A. H. Tebbutt in the issue of this journal for May 22, 1943, recording the occurrence of malaria in a patient at Bega in the southern part of New South Wales is much more than a report of clinical interest. It is a warning and a call to take stock of the position. Up to the present time malaria has not presented a serious and continuous problem on the Australian continent, though it is endemic in New Guinea and other islands to the north and north-east. Malaria is a notifiable disease in all the States except New South Wales and also in the Australian Capital Territory. During the year 1939, before the present war had any effect on the incidence, the number of cases notified in the whole of Australia was twelve; three cases were notified in Victoria, five in Queensland, two in South Australia and two in the Northern Territory. Since the entry of Japan into the war many thousands of Australians in the armed forces have served in heavily infected tropical areas and large numbers of them have acquired the disease. In due course these persons, men and women, will return to their homes in every part of the Commonwealth. There can be no doubt that a large proportion of them will continue to harbour the malarial parasite and be a possible source of danger to people among whom they live.

That the life history of the malarial parasite with its asexual phase, the endogenous cycle, passed in man, and its sexual phase or exogenous cycle, passed with the exception of certain preliminary stages in the mosquito, must be borne in mind during any discussion on the incidence, prophylaxis or treatment of malaria, is a statement so obviously true that apology must almost be offered for making it. The average practitioner in this country has perhaps allowed his knowledge of the life cycle to become rusty. It may therefore be well to state shortly that the infecting sporozoite is introduced into the circulation, when an infected mosquito bites man, through a channel in the hypopharynx of the insect. It is generally supposed that, once it has entered the circulation, the sporozoite penetrates an erythrocyte. Since the parasites are not to be found until several days have elapsed after their introduction it has been suggested that they do not at once enter erythrocytes. The important practical point about this stage of development of the malarial parasite is that quinine has no effect upon it. After the sporozoite has entered an erythrocyte it is described as a trophozoite. When its nucleus begins to develop it is known as a schizont. The nuclear chromatin divides into minute particles, each of which forms the centre of the spore-like merozoite. When rupture of the cell (the merocyte) occurs the merozoites are liberated into the plasma. The occurrence of the rupture of many cells at one and the same time marks the onset of a malarial rigor which is believed to be due to the setting free into the blood of toxic substances from the parasites or from disintegrated erythrocytes. The liberated merozoites attack the remaining erythrocytes and the process is repeated. In addition, however, to the forms produced during sporulation certain sexual forms, the gametocytes, appear. It is these gametocytes which are taken up by a biting mosquito. In the stomach of the mosquito the sexual phase or sporogony takes place. The male cell or microgametocyte loses its flagella which penetrate the female macrogametocyte, fertilizing it and forming the zygote. This zygote or ookinete, as it is called at this stage, becomes capable of movement and bores its way through the wall of the mosquito's stomach, in the outer wall of which it forms an oocyst. In the oocyst numbers of minute sporozoites form, and on rupture of the cyst these sporozoites are set free in the body cavity of the mosquito from which they reach the salivary glands and are ready to infect a human subject. Nowadays we are so apt to forget the historical background of much of our knowledge that to read once again, as we may in many text-books, the story of the long investigations that finally led to confirmation of what was known as the mosquito-malaria hypothesis, will make us the readier to apply the knowledge so hardly and laboriously gained. For malaria to become endemic in an area it is necessary that an anopheline mosquito should have its habitat within that area and that there should be a reservoir of gametocytes of the malarial plasmodium in the circulation of human beings—a mosquito has to be infected as well as a human being. Infection depends on several factors. These have been enumerated by H. H. Scott as follows: (*a*) the average population, the numbers of infected persons, and of these the proportion whose blood contains sufficient gametocytes to infect the local anophelines, that is, the intensity of the source; (*b*) the number of anophelines and the proportion of those which feed on infected persons; (*c*) the number of anophelines which feed on infected persons and survive for a week or more; (*d*) the proportion of anophelines which bite fresh human beings. Scott refers to some calculations made by Ross, some of which are obviously "arbitrary estimates"—25% of the *Anopheles* present succeed in biting human beings; 8% or one-third of these will survive for a week and 2% will bite a second person. In view of our present discussion it should be pointed out that Scott discusses this aspect of transmission in connexion with a reference that he makes to Northern Australia. He states that five species of *Anopheles* are found in Northern Australia and that "there was at one time considerable alarm that malaria might become widespread". He thinks that these fears are unjustified because

in "urban areas" where the population density is high mosquitoes are few and in the rural districts the population is sparse and scattered. We cannot agree that there are in Northern Australia urban areas where the population density would be high, but in spite of this it is interesting to note an estimate based on the calculations made by Ross that one in fifty *Anopheles* is likely to transmit malarial infection. Scott is probably right in his view that malaria is not a grave menace in Northern Australia. (We have already seen that only two cases were notified in that area in 1939.) But we are at present concerned with malaria in Australia after the war. *Anopheles* mosquitoes have been found in many parts of Australia from the north to the south. And in passing we may note that reports have it that a survey of the Bega district is to be made to determine what kind of mosquitoes are there and what species of *Anopheles* among them. So far as is known, of course, no other mosquito than *Anopheles* is a vector for the plasmodium of malaria. What is lacking in Australia is the large reservoir of malarial parasites that exist in the native population in New Guinea and other tropical countries. Malaria will not become a grave menace to Australia unless a reservoir of infection comparable to that present in the natives of tropical countries is allowed to develop in the Australian population.

The control of malaria and its final eradication would probably appear to the inexperienced and the casual observer to be if not a relatively simple matter, at least one whose difficulties are not insurmountable. But in practice the case is quite different. This is not the occasion for reference to the enormous number of infections that are always present in all tropical countries, to the measures that have been adopted in different parts of the world, to victories that have been gained, nor yet to the fact that difficulties are sometimes so great that success is impossible. It must suffice to mention different methods of control and to make special reference to those that may be applied to Australia in her present need. Three chief objectives may be stated. In the first place mosquitoes must be destroyed; secondly, mosquitoes must be prevented from biting man; and thirdly, persons who harbour the parasite must be treated until cure is effected. Those members of the Australian armed forces at present stationed in tropical centres where malaria is endemic are under the control of a special army directorate whose ability none would question. Knowing nothing to the contrary, we assume that the traditional slowness of the combatant side (the side with control of the purse strings) to recognize and provide for the needs of the medical service has not been in evidence. This assumption is made, if for no other reason, because the advent of malarial infection to front-line troops depletes the ranks of effective men in a most effective manner. We are also safe in assuming that the officer in charge of tropical hygiene will do all in his power to see that his orders are carried out. This brings us to the problem of malarial control in Australia as it concerns the civil practitioner at the present time. In regard to the destruction of the mosquito, this will be much more urgent a matter in some places than in others; in certain parts of northern Queensland, for example, we can well imagine that mosquito destruction may be urgently called for. In these circumstances a survey of the mosquito population should be made so that the prevalent species may be determined. When this has been done the most expert advice should be obtained, for a decision must be made as to which of the species is the real criminal. When this has been decided, and not till then, can the necessary prophylactic measures be planned—one species of mosquito differs from another in habits, and conditions that are unfavourable for one species may be favourable for another. The need for expert advice is not always appreciated. We learn on good authority that a medical practitioner in an official position, practising in a mosquito-infested area, was asked not so long ago by the local municipal body to report on the suggestion of another practitioner that an anti-mosquito campaign should be inaugurated. The best reply that he could make was that such a campaign was not necessary since no malaria was known to occur in the district. The protection of the individual from mosquito bites needs but to be mentioned; of the greatest importance at present is the treatment of all infected persons, so that a reservoir of infection shall not be created, and also, of course, so that other individual infections such as that reported from Bega shall not occur. Soldiers suffering from malaria will not be discharged from the army unless they are fit to be discharged. By the time of their discharge they will probably have personal experience of the fact that relapse is not uncommon and they will therefore appreciate the advice that they should see a medical practitioner in the event of their feeling off colour. A practitioner confronted by such a patient will remember that only in exceptional circumstances should he give quinine or any other anti-malarial drug before he has taken one or more blood films for microscopic examination. The details of treatment need not be discussed, but it will be carried out *secundum artem*—on lines that have been found by experience to be effective with the drugs available for use. It must be insisted that the malarial patient should be protected with the most punctilious care from the bites of mosquitoes. He must be trained so to protect himself that he will never be bitten. For this purpose he will wear suitable protection during the day and in the evening; and at night he will sleep under mosquito nets. Should a mosquito bite him or find its way into his net at night, that mosquito must be killed. If these things are done with zeal and intensity Australia will not become saddled *in perpetuo* with malaria. One point remains: New South Wales is the only State in which malaria is not a notifiable disease. This deficiency should be made good without delay.

Current Comment.

THE WARTIME SOCIAL POLICY OF SWEDEN.

BEFORE the war Sweden was one of the few countries which had made serious attempts to deal with the social problems of housing, medical care and so on. The war has brought home to other countries the need for an attempt to solve social problems and it is safe to conclude that the social conscience thus awakened will not be allowed to go to sleep again. Sweden has had and still has a difficult position in relation to the war, and in these circumstances it is of practical importance to know how her social structure has fared during the last three or four years. A report by Tage Erlander, Swedish Minister of Social Affairs, has been published in the *International Labour Review* for March, 1943. The report is described

as a condensed survey, as indeed it is, but it will be possible to abstract its salient features and maybe to gain some ideas or even inspiration from them. Erlander outlines the reforms of the last decade and he gives an account of the social policy in the emergency conditions created by the war. He shows how these conditions have affected the standard of living and particularly of nutrition; he also reviews the measures taken to cope with them, referring in turn to food supply, workers' protection, social insurance, housing and the employment market.

During the period 1930 to 1939 social policy in Sweden underwent an almost complete transformation. In this period the rate of old-age pensions was increased, pensions for orphans of widows were introduced, grants for the maintenance of children born out of wedlock were made secure, and unemployment insurance and grants for the blind were introduced. A policy was introduced to expand employment. The first "experiments in population policy" were made, with the introduction of maternity welfare, maternity benefit, free assistance during confinement, and free medicines *et cetera* for expectant and for nursing mothers and for certain children. In regard to housing, important steps were undertaken—in rural districts about 70,000 dwellings were improved, houses were erected for large families, part of the housing costs of such families were met out of State funds, and a start was made with the building of homes for pensioners out of State subsidies. Erlander thinks that the zeal that was displayed may have been partly due to the feeling that there was a good deal of leeway to be made up—the social standards in Sweden were not very high in the early 1930's, compared, for example, with those of Denmark. A new society was gradually evolving—the Swedish Social State. A unified and complete socio-political system was not evolved; there were gaps and deficiencies. Provision for handicapped persons in industry was not all that could be desired; and in regard to the unemployment system, "there were still remnants of the old relief system, which combined cash relief for the unemployed with special public works where the wages paid were lower than on the open market in order to test the applicant's willingness to work". Unfortunately social welfare activities were dispersed among a great variety of kinds of relief with resultant lowered efficiency and higher cost. A more serious defect was the fact that a substantial part of social welfare work was still in the hands of local poor relief authorities and that the finances for defraying the cost varied with the taxable capacity of the locality. The various defects were being remedied by degrees, but since 1938 the *tempo* of reform has had to be slowed down because of the heavy increase of expenditure on defence. The emergency has created difficulties especially for those in the lower income groups. Efforts have not been shelved altogether, however, and Erlander points out that a Social Welfare Committee, appointed in 1937, is still at work and is expected shortly to submit proposals for a unified social welfare system.

Between the middle of 1939 and the middle of 1942 the cost of living index of the Social Board rose by 41%. Many persons received some kind of money compensation for this rise. It is interesting to note the position of different groups with this compensation. Industrial workers and State and private employees have received a 24% increase in money income, but have suffered a 12% decrease in real income. Forestry workers have had an increase in real income of 10%. The real income of agricultural workers and farmers is more or less unchanged. The same may be said of old-age pensioners whose deficiencies of income have more or less been covered by bonuses. The result of the income position is that the majority of households in the low income group have had considerable difficulties in solving their diet problem. Flour, including bread and cereals, has been rationed; since the beginning of 1942 the basic ration is only 167 grammes a day. The meat ration has been only 28 grammes a day. The fat ration and the sugar ration are considered satisfactory. The difficulty is partially offset by the fact that milk and potatoes have not so far had to be rationed. Regulation of prices has been introduced to a certain extent, and but for this we are told that difficulties would have been greater. Bad harvests have added to the trouble. What are known as discount cards are issued; children and the aged receive these cards for milk and other persons for edible fats. Discount cards enable the possessor to buy the product at a reduced price. Thus each card allows a purchaser to obtain half a litre of milk a day at a reduced price, and approximately 80% of the children and aged in Sweden have these cards. The question of what changes have taken place in the standard of nutrition is, we read, difficult to answer. The changes have not been the same for all sections of the population. From a detailed survey of 400 families it is concluded that there has been "a substantial decline in the consumption of calories and protein". The consumption of fat has fallen considerably—the figure for the second quarter of 1942 is 22% below that for the first quarter of 1940. Many of the households were medically examined and it was found that "as yet" there had been no deterioration in health owing to the state of emergency.

In regard to social insurance, cost of living bonuses have been introduced to supplement old-age pensions and invalidity benefit, children's grants and accident pensions. In regard to unemployment insurance, benefit rates have been increased by a State subsidy, allowances have been introduced for the unemployed person's wife and children and certain of the conditions giving a right to benefit have been eased.

Wartime conditions had a disastrous effect on house building. On October 1, 1940, the number of dwellings being erected was only 10·7% of the corresponding figure for October 1, 1939. By April 1, 1941, the percentage was 13·3. The housing policy during the emergency was based on the following main principle: "A housing shortage must be avoided by bringing on to the market a net surplus of dwellings offered at the 1939 rents, in spite of the rise in the cost of production and of the higher interest rates during the earlier part of the emergency." A committee of inquiry was set up and advocated *inter alia* lowering the prices of building sites, simplifying and rationalizing building methods, lowering building workers' wages, and increasing the control of contractors' profits. On the basis of the report a housing subsidy programme was approved. The aim was to produce 20,000 dwellings in one year, but the results were not satisfactory, a little more than half the programme being realized. The results were improved when the State accepted the responsibility for the greater part of the difference between actual building costs and the value of the property as shown by calculating the yield according to 1939 rents. The State subsidy took the shape of a supplementary loan free of interest and amortization charges. The present arrangement is expected to produce 22,000 dwellings.

Erlander makes an important reference to the employment market. He shows that the country had to adjust itself to the altered economic conditions. The chief problem was to secure enough labour for the forests in order to make up for the sharp decline in imports of coal and oil. The forestry industry has grown enormously. Whereas during 1941-1942 about 34,500,000 man-days were enough for the felling and carting of timber, it is estimated that during the 1942-1943 season 42,000,000 man-days will be needed. The State has extraordinary powers in regard to extension of hours of work, transfer of labour and control of employment, though they have not been used to any great extent. In the section on compulsory labour service, provided for under the *National Service Act*, it is stated that the act has been invoked in order to obtain the medical staff needed for the special hospitals created in connexion with defence.

In his concluding remarks Erlander points out that much more attention than heretofore is being paid in Sweden to the family and to children. It is impossible, he thinks, that what has been done in the social sphere should be forgotten once the emergency is over. Interest in the small birth rate has been reawakened and a committee of inquiry is at work to discover how lessons gained recently may be applied in the future.

Abstracts from Medical Literature.

BACTERIOLOGY AND IMMUNOLOGY.

Blood Charcoal in Tubercle Cultures.

E. NASSAU (*The Journal of Pathology and Bacteriology*, October, 1942) has studied the effect of blood charcoal on the growth of the tubercle bacillus. A modification of petraganis medium containing asparagin was used, and blood charcoal (British Drug Houses) 1% was added. Culture suspensions in varying dilutions were inoculated on test and control media, and at the end of thirty-eight days' observation, colony counts were made. Colonies appeared earlier, and were more visible and more numerous on the medium to which charcoal had been added. Then the medium was used in parallel with the control medium for the testing of pathological material in the routine laboratory from 250 specimens; again it was found that the charcoal-containing medium was more satisfactory, reports being made four to five days earlier when positive results were obtained. In specimens which had been prepared by acid digestion, it was found that the charcoal medium had greater power of combining with free acid than the routine medium, but this was not thought to be the whole explanation of the growth-promoting influence of the blood charcoal on the human tubercle bacillus.

Swine Lungworm and Swine Influenza.

R. E. SHOPE (*The Journal of Experimental Medicine*, February, 1943) has continued his work on the demonstration of swine influenza virus in the lungworm larvæ and swine under natural conditions. First he tried to learn whether or not the virus was present in third stage larvæ in earthworms dug in or near pig pens on farms with a history of annual outbreaks of swine influenza. Fourteen experiments were made with small numbers of worms dug in various farms in Iowa, and two of these were successful, influenza being induced in the test animals, and the virus being isolated after death by means of mouse inoculation tests. A single farm where the incidence of lungworm larvæ in the earthworms was particularly high, was selected to provide test animals for a second experiment to find whether during inter-epizootic periods the pigs on such a farm were carrying masked virus capable of inducing the disease after appropriate provocation, without further dosing of virus. Here three swine from a drove of fifty animals born when no influenza had occurred in the herd for nearly a year, were removed to rigid isolation under laboratory conditions, where it was found that their serum contained no demonstrable antibodies to the virus. By means of various stimuli, including the injection of *Hæmophilus influenzæ suis* and the addition of ethyl alcohol to the diet, swine influenza was induced in two of the three animals, neutralizing antibodies appeared in their serum, the virus was recovered *post mortem*, and the lungworms were demonstrated in the bronchi in each case. The author discusses the application of this now established fact of an intermediate host for swine influenza virus to the epidemiology and the rapid spread of the disease, its long existence in the swine in a masked form, and its sudden development as soon as suitable stimuli or weather conditions create conditions to unmask the virus.

Polysaccharide in Pneumonic Sputum.

J. T. TRIPP, A. W. FRISCH, C. D. BARRETT AND B. E. PIDGEON (*The Journal of Experimental Medicine*, December, 1942) has devised a method of estimating the specific polysaccharide in pneumonic sputum. The work developed as a result of the observation that the microscopic appearances in Type III sputum showed much more capsular stained material, and also that in the Quellung reaction the reticular appearance in many instances was different from that seen in sputum from other type infections. The method entailed the purification of ten millilitres of sputum and its titration against a specific antiserum of known precipitating power, the answer being expressed as milligrammes of nitrogen *per centum*. Information about the patients from whom specimens of sputum were obtained was tabulated; age, bacteriæmia, leucocyte count, lobes involved, sputum count (number of pneumococci seen per oil immersion field), amount of polysaccharide, and outcome of disease were analysed. It was seen that in Types I, II, VII and VIII counts and values for polysaccharide were low, seldom being above twenty milligrammes *per centum*, while in Type III pneumonia, although bacteria counts were low, polysaccharide values were high, reaching their greatest levels in the so-called reticulated sputa, and it was in this group that the mortality was highest.

THE same authors (*ibidem*) have studied the polysaccharide content of the lungs obtained at autopsy from thirteen patients of the above series. The methods were adapted to the material for examination, and peptic digestion was used successfully. The highest values were obtained from grey hepatized lung tissue, and the yields were comparable to those from the sputum of the same patients, figures in the Type III patients being as much as sixty times greater than those of the four other types tested. The authors think their data support the hypothesis that the outcome of the disease in Type III pneumonia is related to the ability of the pneumococci to produce capsular specific polysaccharide.

Synergistic Action of Chick Embryos.

FRED E. BANG (*The Journal of Experimental Medicine*, January, 1943) has tested the synergistic action on the chick embryo of *Hæmophilus influenzæ suis* and the swine influenza virus. He noted that the swine complex infection could not be transmitted to other laboratory animals, and so attempted to infect the developing hen's egg. He found that nine-day embryos could be inoculated with virus and incubated for twenty-four hours to allow the virus to become established; then the combined disease could be produced by inoculating either heat-killed or living cultures of *Hæmophilus influenzæ suis*. He also tried various combinations of the similar strains of human origin. For virus alone, the mortality amongst the embryos was 8%, for *Hæmophilus influenzæ* alone it was 13·9%, and for the combined infection, 65%. The mortality when human virus and swine bacilli were used, however, was only 16·5%, demonstrating specificity of the synergism. The histopathology of the combined disease in the embryo showed a remarkably selective destruction of the embryo lungs which was more extensive than in the *Hæmophilus* infection, or in the so-called filtrate disease. Killed bacteria could produce inflammatory changes comparable to those produced by the living culture, so that some of the effect must simply be due to the bacterial protein. No loss of synergistic effect was noted after the virus had been put through eleven embryo passages. The chick embryo seemed a suitable and sensitive subject for the investigation of the synergism between influenza virus and *Hæmophilus*.

Hæmolytic Streptococci from Floors.

W. G. WALTER AND J. G. HUCKER (*The Journal of Infectious Diseases*, November-December, 1942) have studied β-hæmolytic streptococci isolated from floors of public rooms. Thirty-seven rooms were swept, and the dust was inoculated into a special medium containing potassium tellurite, which inhibited Gram-negative and some Gram-positive organisms, thus favouring the growth of the sought-for organism. The rooms tested were in schools, theatres and an hotel. While there were some seasonal variations noted, the streptococcus was isolated from more than half of the specimens tested. Similar cultures by fermentation tests were grouped together and diagnostic groupings were made on only a proportion. Seven of twenty-four appeared to be Lancefield Group A, five cultures belonged to Group B, one to Group C and the remainder apparently to Group G. The isolations were easy in the period from February to May, but with the advent of warm weather they became increasingly difficult and finally impossible.

Evaluation of Skin Disinfectants.

W. J. NUNGESTER AND ALICE H. KEMPF (*The Journal of Infectious Diseases*, September-October, 1942) devised an "infection prevention" test for the evaluation of skin disinfectants. They point out the misleading information given by *in vitro* tests of substances which can effect bacteriostasis. They devised a technique by which the tails of anæsthetized mice were swabbed with a young broth culture of either hæmolytic streptococci or of pneumococci. The tails were then dipped for a period of two minutes into the disinfectant to be tested, and the terminal half-inch of the tail was removed and placed within the peritoneal cavity of the mouse from which it had been removed. The mouse was observed for ten days; if alive it was killed and cultures were made from the heart blood, and the condition of the implanted tail was determined. It was known that a dose of one to ten viable bacteria of the types used was lethal to the mice. Of the substances tested 2% iodine in alcohol was the most effective, but the range was small, as

it was desired only to test the technique. Comparisons of some of the drugs *in vitro* and in the animals showed wide difference, especially in the mercurial drugs. The authors believe that they have proved the advantages of using living tissue in the detection of surviving potentially pathogenic bacteria, and that the test is simple to perform, rapid and effective.

HYGIENE.

Industrial Illness due to Tetryl.

L. J. WITKOWSKI, C. N. FISCHER AND H. D. MURDOCK (*The Journal of the American Medical Association*, August 22, 1942) discuss 1,258 cases of tetryl illness, together with prophylactic measures and active treatment. The authors state that past literature indicates the common belief that tetryl toxicity consists essentially of local manifestations, but they are not in agreement with this. Out of more than 5,000 workmen in buildings where tetryl is processed, 23% have suffered from symptoms of tetryl illness, the presenting symptom being dermatitis in 944 cases out of 1,258, but in the absence of the typical dermatitis, vague systemic symptoms may be complained of, and are often prodromal. Epistaxis, headache, irritability, lassitude, sleeplessness and irregular menstruation are frequent complaints, and cannot be attributed to a purely local action, whilst secondary anæmia of a rather pronounced degree is also becoming increasingly apparent. Of the 1,258 cases surveyed, only three were sufficiently severe to require admission of the patients to hospital; all three patients had suffered previously from severe tetryl dermatitis. Early diagnosis and prompt treatment are essential to prevent severity of illness; particularly should new employees be watched for the first five weeks of work, most cases occurring during the second and third week of exposure. The authors describe tetryl dermatitis as not unlike a second degree sunburn, whilst its milder form is an erythematous area associated with varying amounts of œdema. In the more severe form drying and desquamation of the epidermis may lead to areas of serious exudation. Tolerance to tetryl, making possible uninterrupted production, is acquired eventually by 60% of workers.

The Epidemiology of Pneumonia.

W. G. SMILLIE AND OLGA F. JEWETT (*American Journal of Public Health*, September, 1942) report that in the medical wards of an orphan home for babies routine swabbings were taken from the naso-pharynx of half the children each week, that is, from each child fortnightly, also from each new patient within a week of admission. Abnormal discharges were similarly tested. Of the 490 cultures, 80% showed pneumococci of 546 different strains, notably Types 14 (26%), 19 (19%) and 6 (13%). Type 14 most often causes serious pneumonia in babies and this finding is ten times greater than usual. Of the pneumonias, 10 out of 31 were of Type 14, but this type was found in 10 out of 40 children who had no respiratory infections. One nursery was found to be a focus, 45% of babies carrying Type 14, and a study of the children suggested that no harm resulted unless a separate acute respiratory infection took place, when the dormant pneumococcus invaded the tissues, spreading to middle ear, conjunctiva, bronchi and lungs. Hence a virulent strain of pneumococcus may permeate a community, yet serious illness need not take place till some untoward factor—an acute respiratory infection—lowers the resistance of the carrier.

Detection of Tuberculosis in School Teachers in the Province of Quebec.

L. LABERGE (*Canadian Journal of Public Health*, March, 1943) states that the province of Quebec in May, 1941, passed a law insisting that all teachers must within two months of appointment be certified by a physician and after radiological and clinical examination by a specialist in tuberculosis be certified free from tuberculous disease. In rural areas special travelling clinics do the work. Of 523 teachers in Quebec, 16 (3%) were withdrawn from teaching because of active or chronic tuberculosis. In the whole province 22,637 were tested officially; 304 (1·3%) had active or non-active disease and 228 (1·0%) ceased teaching, while 484 were placed under observation. In the province religious teachers showed a higher percentage of active and non-active disease, especially females.

Immunological Reactions in Subclinical Trichinosis.

S. E. GOULD (*American Journal of Hygiene*, January, 1943) reports that he has studied in subclinical or old unrecognized trichinosis the diagnostic value of intradermal and precipitin tests and of eosinophilic count. His study comprised observations on 3,398 hospital and 103 aged Jewish patients, and these were compared with 1,231 consecutive autopsies which included 388 subjects who had been submitted to skin tests during life. The microscopic press method by which ten one-gramme specimens of diaphragmatic muscle are taken from near the tendinous insertion gave the largest number of positive reactions. In 1,231 autopsies, 22·6% of positive reactions were obtained, and in 317 diaphragms, 29·3%. The incidence increases with age from 3·6% in the twenties to 33% in the eighties. In 49% less than one larva per gramme and in 4% over 100 larvæ per gramme were found. The median age was sixty-two. Of 136 subjects under sixty-two years of age 10·3% had infestations of more than 10 larvæ per gramme, and of 136 over sixty-two, 18·4%. Calcification of cysts was present in 83% of 228 subjects tested, and in 94% of infestations of over 50 larvæ, while 87% of subjects in the eighth decade had more than one infestation. Tests for motility gave 18% of larvæ all motile and 17% with some motility. Non-motile larvæ increased in number with age. Antigen tests (1 in 500) gave 13·5% reactions, the percentage decreasing with age. Of 103 Orthodox Jews who had never eaten pork, two gave the intradermal reaction, while seven others had a mild eosinophilia. In subclinical trichinosis, infestations are as a rule mild, but even in heavy infestations of over 100 larvæ per gramme no symptoms may have been noted. Intradermal tests are of little use in old subclinical cases and no immediate reaction occurred in five heavy infestations. Allergic responses were not noted. The precipitin reaction suggested recent infestation. Eosinophilia occurred only in two out of 65 trichinous patients and is evidently lost earlier than the serum reactions. A well-marked eosinophilia is not apt to be the result of an old subclinical or unrecognized infestation.

Comparative Nutritive Value of Butter Fat and Vegetable Oils.

E. B. HART (*American Journal of Public Health and the Nation's Health*, March, 1943) reports that in recent years "filled milk" has been allowed. In "filled milk" fat removed from milk has been replaced to a 4% level by vegetable oil to which vitamins *A*, *D* and *E* were added and the milk has been reinforced with iron, copper and manganese. Experiments with young weanling rats show that rats on butter fat grow better and look better. The growth stimulation lies in the saponifiable fraction. It is not due to a phosphatide. Hydrogenation of the unsaponified part of butter fat can further improve growth, but hydrogenation did not improve vegetable oils. Apart from vitamins, butter fat is definitely better for young animals than vegetable oils, even though reinforced. The sale of "filled milk" where it would be used as the sole nutrient of young children should be prohibited.

Bacterial Food Poisoning.

C. E. DOLMAN (*Canadian Journal of Public Health*, March, 1943), in a review of bacterial food poisoning, emphasizes the lapses in sanitation in wartime and the danger of the failure to pasteurize milk and milk products. A case of staphylococcal food poisoning from butter milk is fully recorded; the cow was proved to be a carrier of hæmolytic streptococci. An outbreak of typhoid fever in Vancouver is described in which shelled crabmeat was the source; the crabs though boiled were afterwards washed in the waters of a creek polluted by hospital sewage with typhoid bacilli. Canada seems relatively free from botulism. By routine stool cultures of recruits in Vancouver, four healthy carriers of *Shigella dysenteriæ* (Flexner) and one of Sonne, also two carriers of typhoid bacilli, were found in the first 1,000. The Sonne carrier was cook to an officers' mess. Education and control of food handlers is therefore needed as well as the raising of the level of community sanitation.

Leptospirosis in New York City.

E. J. TIFFANY AND N. F. MARTORANA (*American Journal of Hygiene*, September, 1942) report a survey of leptospirosis in New York City. Blood samples from 1,351 individuals gave ten positive findings for leptospiral infection; the titre was 1:320; eight of the patients gave a history of past suspicious illness. Of 43 who gave reactions to titre of 1:160, three had had a suspicious illness. In only two cases had the clinical diagnosis been given. Of 515 workers in sewers where rats are often seen seventeen gave positive findings and six had had a suspicious illness. By 125 sewer workers for eleven years or so, fourteen positive findings and five significant histories were given; 102 from a fish market gave eleven positive findings and four significant histories. Weil's disease is therefore endemic and sporadic in New York, though usually unrecognized.

Medical Societies.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING of the Melbourne Pædiatric Society was held at the Children's Hospital, Carlton, Melbourne, on November 18, 1942, DR. H. L. STOKES, the President, in the chair.

Sarcoma of the Quadriceps Muscle.

DR. H. DOUGLAS STEPHENS showed a boy, aged two years, who had been admitted to hospital on November 6, 1942, on account of a lump in the left thigh, which it was stated had been present from early infancy, but was slowly becoming larger and harder. During the last two months other swellings had appeared in the groins and in the abdomen to the left of the umbilicus. The original tumour was embedded in the *quadriceps femoris* muscle; it was not tender and was about the size of a pigeon's egg. The inguinal swellings could be accepted as enlarged lymphatic glands. At first it was thought that the abdominal mass was movable in the parietes, but on rectal examination it was palpable; it was fixed to the inner wall of the brim of the pelvis to the left of the mid-line of the body, and it was not tender. Recently the boy had complained of abdominal pan and had vomited occasionally. At times the left knee had seemed to be somewhat stiff. Otherwise he appeared to be healthy and had not lost weight; the weight was 26 pounds 9 ounces.

Dr. Stephens said that the family history was satisfactory; the mother, father and three brothers were alive and well, and the mother had never miscarried. He went on to say that no abnormal appearances had been detected in skiagrams of the femora, pelvis, chest or head. The Casoni, Mantoux and Wassermann tests failed to produce a reaction. On November 11 the number of erythrocytes was normal and platelets were plentiful; the leucocytes numbered 11,500 per cubic millimetre. The cells in the blood film were satisfactory in appearance; but the differential leucocyte count was of interest: polymorphonuclear cells numbered 56%, lymphocytes 31%, monocytes 6·0% and eosinophile cells 7·0%. In another film, six days later, only 1% of eosinophile cells were seen.

DR. H. C. COLVILLE said that the case reminded him of one at the Alfred Hospital. He had explored the abdomen and found an inoperable tumour fixed in the hollow of the sacrum. In sections of the biopsy material prepared by Dr. Rupert Willis evidence was found for the diagnosis of a ganglionic neuroma. Three years had passed, and the growth had been kept under control by deep X-ray therapy. The mass filled the pelvis, leaving a mere chink for the passage of the colon and urinary tract. Dr. Colville mentioned the possibility that in the present case the abdominal mass might be primary and the mass in the thigh might be of a different nature; it had been there a long time and was not growing at so fast a rate as the others.

DR. ROBERT SOUTHBY said that in the early part of 1942 he had come across a child, aged four years, with a mass of glands in the groin and a lesion under the flank not involving the skin. A gland was found to have been replaced by a round-celled sarcoma, which simply melted under the influence of deep X-ray therapy. All looked well for three or four months; but then the abdomen filled with ascites, secondary deposits were detected in the lungs, and the child died a week later.

DR. J. W. GRIEVE considered that much notice should be taken of the primary lesion in the leg; the other lumps were obviously glandular, but the site of the primary lesion was not a place where lymph glands were found. He understood that Dr. Stephens intended to obtain a biopsy specimen from the primary growth.

DR. WILFRED FORSTER said that the primary lesion might be rhabdomyosarcoma. He did not think that relative size or rate of growth was a reliable guide as to which of several lesions was the primary one. He had experienced huge metastases resulting from an apparently innocuous small subungual melanoma.

Dr. Stephens, in reply, said that he had suspected that the lump in the thigh was a neuroblastoma, but the mother insisted that it had been there for at least eighteen months. At the first rectal examination, performed without the aid of anæsthesia, he had failed to feel the abdominal tumour. The size of the glands in the grain had increased rapidly; it was quite a possibility that the abdominal mass had deep connexions, but he obtained no evidence of association with the kidney or adrenal gland. He felt sure that the condition was malignant and would need deep X-ray therapy. He intended to remove a gland from the groin, and if the condition was malignant, he would arrange for a course of deep X-ray therapy.[1]

Miliary Tuberculosis.

DR. REGINALD WEBSTER reported the post-mortem findings in the case of a child, aged two years, whom Dr. Grieve had presented at the October meeting of the society (THE MEDICAL JOURNAL OF AUSTRALIA, Volume I, 1943, page 451), and who had in the interval died of acute miliary tuberculosis. It would be remembered that the child, whose mother was a subject of pulmonary tuberculosis, displayed convincing radiographic evidence of miliary tuberculosis, that the illness had been initiated with drowsiness, twitching of the muscles of the right side of the face, the right arm and the right leg, and that hemiparesis affecting the right side of the body supervened. Dr. Mark Gardner had detected chorioidal tubercles and had reported the absence of papilœdema. Neither the clinical course of the child's illness nor the laboratory findings in the cerebro-spinal fluid fulfilled the anticipation of tuberculous meningitis, and some consideration had been given to the diagnosis of intracranial tuberculoma. A note in the clinical record, dated the day before the child's death, recorded the development of puffiness and crepitation in the tissues of the lower part of the neck. The basis of this observation was apparent at autopsy, which disclosed widespread emphysema of the anterior portion of the mediastinum and extension of the air infiltration to the subcutaneous tissue of the neck and supraclavicular fossæ. Adhesions in the immediate vicinity of a caseating Ghon focus had occluded the pleural cavity, with the result that the breaking down of the peripheral focus on the medial aspect of the middle lobe of the right lung had induced emphysema of the cellular tissue of the mediastinum rather than pneumothorax.

Dr. Webster placed on view a museum preparation of the child's brain, and he drew attention to the subarachnoid hæmorrhage which had occurred in the fronto-parietal region on the left side. A smaller extravasation of blood was also to be seen on the vertex of the right cerebral hemisphere. A number of small caseous foci, larger than the miliary tubercules of tuberculous meningitis, but not exceeding three millimetres in diameter, were dotted about the convexity of the cerebral hemispheres of both sides, and it was particularly to be noted that there was none of the plastic basal exudate and hydrocephalus of tuberculous meningitis. Dr. Webster was of opinion that the small caseous cerebral foci, which were so conspicuous in this specimen, were of the nature of those, the rupture of one or more of which was held by Rich and McCordock to be the usual precipitating factor in tuberculous meningitis. Rich and McCordock had challenged the view that tuberculous meningitis was but a phase of acute miliary dissemination and was therefore of immediately hæmatogenous origin. The burden of their thesis was that the discharge of the contents of a contiguous caseous focus into the subarachnoid space was the usual mode of origin of tuberculous meningitis. This statement of the pathogenesis of tuberculous meningitis had been provocative of much speculation and research. McGregor and Green, of Edinburgh, after a comprehensive study of 112 brains, gave general support to the view of Rich and McCordock; but a difficulty in the way of its full acceptance was the coincident occurrence of miliary tuberculosis and tuberculous meningitis in the great majority of infants and young children who died of acute tuberculosis. In the discussion which this point had evoked among interested workers, it had even been suggested that tuberculous meningitis might precede and give rise to miliary dissemination.

Dr. Webster said that although at first this proposed reversal of a conception which had prevailed for generations seemed to him an improbable, if not far-fetched, idea, on reflection he found it not so unreasonable. His experience at the Children's Hospital was that *Mycobacterium tuberculosis* was susceptible of cultivation from the cerebro-spinal fluid of every child affected with tuberculous meningitis; the inference was that tubercle bacilli were always free in the cerebro-spinal fluid, and in the normal course of its circulation the spinal fluid would convey the microorganisms to the venous system. In the absence of tuberculous meningitis, his remarks were perhaps not directly applicable to the child whose brain he had exhibited; but the specimen, when considered with the clinical sequence of events, sug-

[1] Dr. Webster subsequently examined a biopsy specimen from the tumour in the thigh and pronounced it to be a very malignant round-celled sarcoma.

gested that acute and generalized miliary tuberculosis was referable in this instance to the central nervous system. It appeared that erosion of a vein of the pia-arachnoid and discharge of bacilli into its lumen had been effected by one of the conspicuous though small caseating foci on the surface of the brain. The subarachnoid hæmorrhage was suggestive of such an occurrence, and at the same time accounted for the drowsiness, muscular twitchings and hemiparesis which were the dominating features of the onset of the child's illness. It might almost be said that miliary tuberculosis developed under radiological observation. Dr. Colin Macdonald's report of September 17, 1942, noted the presence of a large, partially calcified and almost certainly tuberculous focus in the middle third of the right lung field. At that time there was a suggestion of miliary tuberculosis in the radiograph; but another taken six days later provided evidence on this point which could scarcely be questioned.

Generalized Glandular Enlargement.

DR. W. W. MCLAREN showed a girl, aged just over one year, with mild generalized glandular enlargement, to illustrate the point that it was not sufficiently well recognized that the condition occurred not uncommonly after the exanthematous diseases. He said that it was a mistake to suspect leuchæmia, and on account of the risk of cross-infection, it would be better not to send the patients to hospital at all. In the present instance the patient had suffered from measles and probably from a toxic erythema with desquamation within a month or six weeks. Paul Bunnell's test for glandular fever produced negative results, and by sternal puncture, and by examination of blood films and blood counts, it was possible to refute the provisional diagnosis of acute myeloid leuchæmia.

Recurrent Hæmatemesis.

Dr. McLaren also showed a male baby, aged ten months, who from the age of five weeks had vomited habitually, often producing blood-stained vomitus and sometimes having an actual hæmatemesis. A moderate degree of anæmia of the secondary type had developed, and whenever they were examined, the fæces always gave the reaction for occult blood. By radiographic examination after an opaque meal it was demonstrated that there was some pyloric spasm, but not obstruction; nothing like Meckel's diverticulum had been visualized. The progress that the baby had made had been disappointing, and Dr. McLaren asked for suggestions as to diagnosis and treatment.

DR. H. BOYD GRAHAM said that he regarded the baby's condition as an example of the duodenal ulcer type of pylorospasm. Other types of pylorospasm closely resembled pyloric stenosis or were more distinctly reminiscent of colic or gastro-enteritis. It should not be overlooked that peptic ulcer did really occur in young babies; Dr. Webster had at least one perfectly convincing specimen in the pathological museum. Even when the presence of an ulcer could not be demonstrated radiologically it was wise to treat a baby with the history Dr. McLaren had outlined by means of additional alkaline preparations and sedatives along protocol lines. The outlook was good, the tendency being towards fewer attacks and decreasing severity as the months went by. The anæmia should, of course, be controlled by suitable iron therapy.

Dr. Graham went on to say that angioma or varix of the gastric mucosa was at least an entrant in the differential diagnosis, because of the fidelity with which it received a mention in the text-books. Another possibility (which really happened occasionally) was repeated hæmorrhage from an inclusion of a gastric islet of oxyntic cells at the base of a Meckel's diverticulum; it would seem that, in this case, Dr. McLaren had been able to exclude that as a cause of the trouble. It was unusual, however, in ulcer or in the ulcer type of pylorospasm to lose so much blood as ten ounces at the age of ten months. Each case required close study over weeks or months; in the absence of any further opportunity to study the case, Dr. Graham regretted that he could not help Dr. McLaren any further.

Dr. Grieve mentioned the possibility that the origin of the trouble might be in the œsophagus; an anomaly of structure might be present, and there might be a liability to vomiting and to hæmorrhage on that account.

Dr. Stephens commented on the absence of pain and acute surgical features, and on that basis he thought it possible to exclude congenital anomalies, herniæ or Meckel's diverticulum; the last-mentioned produced colic from the amount of blood exuded from the ulcerated patch. He went on to say that it was true that "short œsophagus" produced hæmorrhage, and frequently; radiological examination after an opaque meal made possible the exclusion of that condition. It was probable, therefore, that duodenal ulceration was the diagnosis.

Dr. Webster said that he had brought from the museum a photograph of a specimen he had secured in 1934 and also a microscopic slide prepared from it. The specimen of the stomach and duodenum had been obtained from a baby who had died at the age of four months, after having vomited blood and mucus for three months. From the specimen it could be seen that the process had become chronic. Dr. Webster indicated in the pylorus the base of a small gastric ulcer, and said that the site was exceptional. He had also a specimen of duodenal ulceration in infancy from a baby who had died in an acutely septic state. He had found many references to the subject in the literature, and he referred particularly to an article by Proctor in *Surgery, Gynecology and Obstetrics* in 1925, in which were to be found the criteria of chronicity; they included duration of at least two months, indurated edge and adhesions to neighbouring structures.

Dr. McLaren, in reply, thanked those who had spoken, and said that he had favoured the diagnosis of ulcerated Meckel's diverticulum. He had not realized that children suffered from chronic peptic ulceration and had been trying hard to get the baby well enough for the surgeons to consider laparotomy. The patient was at last on the up-grade. Dr. McLaren had used alkaline powders. Babies ran a real risk of intercurrent infection while in hospital, and he intended to send the patient home for a while, with a suitable diet and medicine to bring about the healing of peptic ulceration.

Thrombocytopenic Purpura.

DR. L. P. WAIT showed a girl, aged eleven years, with a long history of blood disorder and failure to react satisfactorily to treatment. In April, 1940, it was noted in the out-patient department that a peculiar generalized pigmentation of the skin was present, but there were no changes in the mucosa. It was known that the child was a member of a tuberculous family; a sister and a grandfather had died of pulmonary tuberculosis. It was also known that the father was an invalid; he had had cirrhosis of the liver and hæmatemesis in 1937, had bled freely from childhood, and came of a family of hæmophiliacs. There were two siblings who were healthy. In August, 1940, X-ray films of the patient's chest were prepared, and no evidence of tuberculous lesions was obtained. A blood examination was also made at that time; the hæmoglobin value was 67%; the erythrocytes numbered 2,610,000 and the leucocytes 7,300 per cubic millimetre; 33% of the leucocytes were polymorphonuclear cells, 61% were lymphocytes, 5% were monocytes and 1% were eosinophile cells; slight poikilocytosis and anisocytosis were noticed, with a trend towards largeness of the erythrocytes.

Dr. Wait said that treatment with ferrous iron was commenced, but the child had failed to continue in attendance at the hospital. She returned in January, 1942, and was admitted to hospital. In the interval she had had two severe epistaxses, and three weeks before returning to the hospital she had been seen by her doctor on account of the appearance of vesicles following sunburn and attributed by the doctor to chicken pox. All the vesicles became hæmorrhagic and some were infected; but on the day of her admission to hospital she had had a severe epistaxsis and was extremely pale, though her skin was deeply pigmented. All over the precordium systolic and diastolic bruits were audible. The spleen was not palpable; the clotting time was five minutes and the bleeding time was three minutes. A transfusion of seventeen ounces of blood was made from a compatible donor, and soon the patient was transferred to the after-care home; the hæmoglobin value was then 62% and the platelets numbered 90,000 per cubic millimetre. After three weeks she had another severe epistaxsis and was sent back to the hospital; the hæmoglobin value had fallen to 30%. During the next two weeks, after repeated small transfusions of blood the hæmoglobin value rose to 60%; a diagnosis of thrombocytopenic purpura was made, and the patient was referred to the out-patient department for observation and continuation of treatment with ferrous iron.

It was at that stage that she had come under the care of Dr. Wait, in April, 1942. She looked pale and ill and the pigmentation was noted to be still present. The mother stated that the child still bruised readily and was listless and anorexic and tired easily. A blood examination was made; the hæmoglobin value was 46%; the erythrocytes numbered 2,000,000 and the leucocytes 5,900 per cubic milli-

metre; 35% of the leucocytes were polymorphonuclear cells, 60% were lymphocytes, 4% were monocytes and 1% were eosinophile cells. In the film the erythrocytes were seen to vary slightly in size and in shape, and very few platelets could be seen. As no clinical improvement had occurred, Dr. Wait had consulted with Dr. Wilfred Forster, with a view to the performance of splenectomy, and the child was readmitted to hospital. By sternal puncture it was established that the bone marrow was hyperplastic and regenerative and that there was no evidence of leuchæmia. The Mantoux test produced no reaction; the fæces contained occult blood, but no intestinal worms or ova. After repeated pre-operative transfusions of blood, by means of which the hæmoglobin value was raised to 78%, Dr. Forster removed the spleen towards the end of July, 1942. It was not enlarged, but the liver was very large and smooth. After an uneventful convalescence the patient was discharged from hospital and resumed attendance at the out-patient department. A month later the mother reported that there had been no further bruising or bleeding and that the child's appetite, energy and temperament were improving. After another month, however, the hæmoglobin value was only 68%, and in October it was 65% after a slight epistaxsis. Very few platelets could be found. Five cubic centimetres of "Campolon" were introduced intramuscularly. In November pigmentation of the skin was deepening; but in spite of two further similar injections of "Campolon" and the daily use of ferrous iron the child's general condition had deteriorated seriously. At a blood examination made on November 12, the hæmoglobin value was only 49%, but the erythrocytes numbered 1,890,000. Examination of a blood film revealed macrocytosis and the presence of Howell-Joly bodies. The leucocytes numbered 6,000 per cubic millimetre, 32% being polymorphonuclear cells, 64% lymphocytes, 3% monocytes and 1% eosinophile cells.

Dr. Wait said that he was showing the girl because he felt that splenectomy was indicated and justified on the evidence at the time of operation, but that it had not stopped the disease process. Indeed, the latest evidence pointed to the presence of a macrocytic anæmia of the pernicious type. He put forward the idea that the liver was so damaged that either interference with the storage of the hæmatopoietic principle or non-absorption of iron was present. In hæmochromatosis he would expect splenomegaly, cirrhosis and usually *diabetes mellitus*. In Addison's disease he would have expected the Mantoux test to produce a positive reaction and the patient to be much more asthenic; but she had become much stronger since the splenectomy.

Dr. Southby said that the bronzing might be associated with a disturbance of the adrenal gland. He had not seen so young a patient with Addison's disease. He asked whether the blood pressure was low, and whether the child had had any intestinal upsets. He suggested that cortical suprarenal extract might prove helpful.

Dr. Stokes said that there were both idiopathic and secondary symptomatic types of thrombocytopenic purpura. He had shown an example of the second type at a meeting of the society; the patient had been admitted at the Alfred Hospital after severe post-tonsillectomy hæmorrhage.

Dr. Wait, in reply, said that Addison's disease was practically non-existent in childhood; Dr. Webster had seen tuberculous foci in the adrenal gland only as part of widespread miliary dissemination in generalized tuberculosis. He had to confess that he had no information on the subject of the child's blood pressure, but she had had diarrhœa on odd occasions. He thanked Dr. Southby for the suggestion about cortical suprarenal extract; he also intended to use a preparation of iron with bile salts.

Correspondence.

A SALARIED MEDICAL SERVICE.

SIR: Surely it is not quite fair of Dr. Ashby to condemn a salaried medical service because of the Government's low estimate of the financial worth of professional ability? The power to alter this estimate lies in the hands of the doctors themselves.

Here is another side of the picture. It is well known that a large amount of X-ray work in Australia is being performed by men with no radiological qualification whatever. Yet I am unable to obtain employment in my own country, in spite of possessing the highest diploma and ten years' experience of radiology—including the control of large full-time X-ray departments in New Zealand government hospitals and the British Army.

It is now seven months since I was instructed by the Assistant Director-General of Medical Services to resign my British Army commission as an essential preliminary to enlistment in the Australian Army Medical Corps, and I, accustomed to dealing with the War Office, obeyed orders in ignorance of the necessity of obtaining a written agreement from Colonel Colvin.

Yet it has taken the State Medical Coordination Committee six months to find me a civilian appointment—the choice between general practice in the Mallee and a house surgeonship at the Children's Hospital!

In my opinion a salaried medical service is as desirable as it is inevitable. But we as a profession must have strong leadership if we are not to be completely controlled by laymen.

Instead of trying to fight the creation of a service which is bound to come, members would be well advised to provide themselves with an association willing and able to look after the interests of the humblest one of them.

Yours, etc.,

MARY THORNTON, M.B., B.S. (Melb.),
F.F.R. (Lond.), late T/Major,
R.A.M.C.

Warrandyte,
Victoria,
May 24, 1943.

THE TREATMENT OF ANGINA PECTORIS AND ESSENTIAL HYPERTENSION BY TESTOSTERONE PROPIONATE.

SIR: I have been interested in the reports found in the current American medical literature on the treatment of *angina pectoris* and essential hypertension by the use of testosterone propionate.

Since the latter part of 1942 I have had in cardiological practice recourse to this therapy for several cases. Six of the patients clinically suffered *angina pectoris* either following coronary occlusion or without that definite history, but all had significant electrocardiographic patterns. The other case had clinical *angina pectoris*, but no incontrovertible support to the diagnosis was given by the electrocardiograph either with anoxæmia induction or otherwise. In the six above-mentioned cases there has been marked improvement both subjectively and objectively as demonstrated by the amount of work that can be done without pain. The patient in the clinical (only) *angina pectoris* category has not yet shown sufficient definite improvement after seven injections to be classified as improved, but he is still being treated, as were the others, ambulatorily.

Primarily, I write for the purpose of eliciting the experience of other practitioners who may have tried this form of treatment for the alleviation of the ever-increasing number of cases of *angina pectoris* with primary cardiac trouble.

The preparation I have employed is "Neo-hombreol", Organon, and doses of ten milligrammes intramuscularly were the most satisfactory for this purpose.

Yours, etc.,

LEON OPIT.

A.M.P. Building,
21, King William Street,
Adelaide.
May 27, 1943.

POST-GRADUATE TRAINING FOR JUNIOR MEDICAL OFFICERS IN THE ARMED FORCES.

SIR: I have discussed the above subject with a number of young medical officers, mainly from the Army. One and all they have expressed their realization of the need for some provision for a refresher course in medical or surgical subjects. Many, or even the majority of them, have had a period of only nine to twelve months as house surgeon and house physician before joining the Army. Almost invariably these young men are allotted jobs as regimental medical officer. One and all declare they act during fighting periods mainly as glorified first-aid men, applying field dressings to wounds, and giving wounded men a hypodermic injection of morphia before sending them forthwith back to casualty clearing stations and thence to base hospitals. They

all agree that, apart from such work, the only other medical experience they gain is the ability to pick out quickly at sick parades the man who is really ill from those who are trying to dodge fatigues or other duties.

Some of these young men have seen three years, and many of them two years, of active service overseas. It seems to me that one and all they deserve an opportunity to improve their medical knowledge. Not only this, but some of them have been promoted, and as majors they can no longer be regimental medical officers, and are transferred to field ambulances or similar unit. One such young man said that if in the field ambulance he was required to give an anæsthetic, he felt after three years as a regimental medical officer he urgently needed further instruction.

Anæsthetic instruction is only one of the many gaps in their training. I suggest that such young medical officers after two years' service as regimental medical officers or similar posts urgently need a refresher course of at least two months at a civil hospital. Not only for the officers themselves but also for their soldier patients such provision seems essential. This need is greatest in the Army, and probably least in the Navy. I have discussed the matter with officers of higher rank in all services, and everyone, when his attention has been drawn to the subject, has agreed that the post-graduate course was highly desirable, and none seemed to think that it was impossible of attainment.

Yours, etc.,

E. H. MOLESWORTH.

Beanbah,
235, Macquarie Street,
Sydney.
May 28, 1943.

THE NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL.

SIR: Because of certain statements which were published in THE MEDICAL JOURNAL OF AUSTRALIA of April 24, 1943, page 372, concerning the functions of the National Health and Medical Research Council, that Council, at its meeting on May 27, instructed me, as its chairman, to state its functions as prescribed in the Order-in-Council creating it.

The Order-in-Council of September 24, 1936, contains this clause:

> The functions of the National Health and Medical Research Council shall be as follows:
>
> To advise Commonwealth and State Governments on all matters of public health legislation and administration, on matters concerning the health of the public and on medical research;
>
> To advise the Commonwealth Government as to the expenditure of money specifically appropriated as money to be spent on the advice of this Council;
>
> To advise the Commonwealth Government as to the expenditure of money upon medical research and as to projects of medical research generally;
>
> To advise Commonwealth and State Governments upon the merits of reputed cures or methods of treatment which are from time to time brought forward for recognition.

Because of the discussions which have followed the publication in November, 1941, of the Council's scheme for a salaried medical service, the Council desired also that the circumstances associated with the preparation of this scheme should be stated.

The Minister for Health (Sir Frederick Stewart), in opening the Tenth Session of the Council (May, 1941), informed the Council that he hoped to revive the national insurance scheme which, although passed by Parliament, had been held in suspense, and invited the Council to submit its recommendations as to this or other scheme for providing for the health of the people.

At a special meeting in July, 1941, the Council considered the position and adopted a report reviewing certain essential principles which would be met in any attempt at the improvement of public health. In this report appears the following passage:

> The logic of facts points, in the opinion of this Council, to the need for critical and dispassionate examination in consultation with the medical profession of the place of the doctor in society before the Insurance Scheme is brought into operation, or before any other National Health Scheme is considered.

The Council appointed a subcommittee to report "upon the most effective organization for the preservation and protection of health of the people of Australia".

The report of this subcommittee was presented at the meeting of the Council in November, 1941, under the title "An Outline of a Possible Scheme for a Salaried Medical Service", and, after consideration, the Council passed the following resolution:

> This Council, having perused an outline of a possible scheme for a salaried medical service, which has been submitted to it by a subcommittee of the Council, is of the opinion—
>
> (a) that the present system of providing medical care to the public is capable of considerable improvement in some directions;
>
> (b) that such measures might involve the provision of a general medical scheme for all Australia, available at will to all persons resident in Australia;
>
> (c) that the scheme outlined provides a basis for discussion with representative members of the practising medical profession in Australia, and that such discussion is essential for the correlation of differing but sincerely held points of view.

The above record of events has been prepared to show that the National Health and Medical Research Council has (i) acted within its proper functions; and (ii) has prepared for consideration and discussion a statement which includes some important aspects of national policy which should be carefully studied by all who have a personal or official responsibility for the care of the health of the people.

Yours, etc.,

J. H. L. CUMPSTON,
Chairman, National Health and Medical Research Council.

Canberra,
June 2, 1943.

THE FUTURE OF MEDICAL PRACTICE.

SIR: All are agreed that the medical profession is approaching a major crisis. No one appears to know exactly what the factors are making for this crisis, but two factors undoubtedly play the major part: (i) political, (ii) a movement in our own profession. Both of these in turn are due to an ideology that is not new, but one that is clothing itself in new terms.

The whole question thus resolves itself into a clash of ideologies, just as truly as the world crisis is due on a vaster scale to the clash of the same ideologies. These ideologies can be summed up in two words: "freedom", "control". I am convinced that unless the issue now confronting us is faced in this manner, the profession will inevitably suffer in many ways.

I have given a great deal of thought to matters of socio-economic importance, and find that there is great difficulty in placing basic principles before other people. May I be permitted therefore to place my views to the profession in an aphoristic form expressed as a series of "don'ts".

1. Don't think that sudden revolutions in thought or practice result in progress. Experiences of history teach the opposite.

2. Don't imagine that governments can do things better than individuals. Experience teaches the opposite. Remember, "that government governs best that governs least" (T. Jefferson).

3. Don't think that planning will solve our difficulties. Once a plan is laid down it must be more rigid, more difficult to change than is a natural growth.

4. Don't think that you can give people free service—there is no such thing. The people will have to pay, and pay dearly, through taxation.

5. Don't let yourself be gulled by the idea that you must plan in human affairs. Remember the old saying: "The best laid plans of mice and men" *et cetera*.

6. Don't be misled by the catch-cry: "The middle classes cannot afford medical treatment." Remember, Australia spends annually £42,000,000 on alcohol, £100,000,000 or more on gambling, £10,000,000 on tobacco, and has wasted many millions on foolish government schemes. Don't forget the high sums spent by the people on quacks and self-medication. Don't be misled by promises of salaries and pensions. These will be fixed. Taxation and the value of money are not fixed—the first tends to rise, the other to fall.

7. Don't become enmeshed in the details of various plans. You will inevitably open many loopholes by doing this and give politicians the chance to confuse you and divide you.

Don't forget the real issue is ideological. It is between all that is contained under freedom as against all that is contained under control. No other real issue confronts you.

Don't forget distant hills glow with gold. Keep to the solid foundations upon which the glories of modern medicine have been built.

Don't be intoxicated with words. Such intoxication is more deadly than that of alcohol. New orders and brave new worlds are idealistic concepts.

Don't think that you can force good health on the people. Good health and better health is coming gradually as the result of human scientific endeavour.

Don't believe the people are demanding better medical services. There is no particle of evidence for such an idea.

Don't think that a change-over is inevitable—that is the cry of despair, the way to defeat. The apostles of control desire you to think so. Progress under free conditions only can be said to be inevitable—vast sudden changes are not inevitable, and always lead to a reaction.

Finally remember this move is part of the plan to socialize Australia. If such were to take place, society would become stabilized, imprisoned and stereotyped, like the social structure of the ant and the bee—wonderful in its imprisonment.

It is only under liberty that the fleeting flower of life can bear its perfume, and we are weeds without it.

Yours, etc.,

PAUL G. DANE.

111, Collins Street,
Melbourne,
May 31, 1943.

Notice.

A MEETING of the Medical Women's Society of New South Wales will be held at the Rachel Forster Hospital for Women and Children, 150, Pitt Street, Redfern, on Wednesday, June 16, at 8.30 o'clock p.m. Dr. E. P. Dark will deliver a short address on "Some Social Aspects of Medicine". Members of the British Medical Association are invited to attend.

Naval, Military and Air Force.

CASUALTIES.

ACCORDING to the casualty list received on June 8, 1943, Lieutenant-Colonel C. P. Manson, A.A.M.C., Hawthorn, and Captain G. L. Thomas, A.A.M.C., Malvern, are reported to be missing, believed drowned by enemy action.

Obituary.

ERIC NORHAM SCOTT.

WE regret to announce the death of Dr. Eric Norham Scott, which occurred on May 30, 1943, at Caulfield, Victoria.

RICHARD HERBERT JOSEPH FETHERSTON.

WE regret to announce the death of Dr. Richard Herbert Joseph Fetherston, which occurred on June 2, 1943, at Melbourne, Victoria.

HENRY ST. LEGER MOSS.

WE regret to announce the death of Dr. Henry St. Leger Moss, which occurred on June 6, 1943, at Sydney.

HAROLD THEODORE MARSH.

WE regret to announce the death of Dr. Harold Theodore Marsh, which occurred on June 7, 1943, at Killara, New South Wales.

Books Received.

"Physical Exercises for Asthma" approved by the Honorary Medical Advisory Committee of the Asthma Research Council; Fourth (Revised) Edition; 1943. London: H. K. Lewis and Company Limited. 8¾" × 5¾", pp. 26, with 37 illustrations. Price: 1s.

"Transurethral Prostatectomy", by Reed M. Nesbit, M.D., F.A.C.S.; First Edition; 1943. Springfield: Charles C. Thomas; London: Baillière, Tindall and Cox. 10" × 6¼", pp. 201, with 62 illustrations. Price: $7.50.

"The Ophthalmic Prescriber's Codex", by Francis E. Preston, D.O.M.S.; 1943. London: H. K. Lewis and Company Limited. 7¼" × 5", pp. 182. Price: 10s. 6d. net.

Diary for the Month.

JUNE 15.—New South Wales Branch, B.M.A.: Ethics Committee.
JUNE 16.—Western Australian Branch, B.M.A.: Branch.
JUNE 17.—New South Wales Branch, B.M.A.: Clinical Meeting.
JUNE 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JUNE 23.—Victorian Branch, B.M.A.: Council.
JUNE 24.—New South Wales Branch, B.M.A.: Branch.
JUNE 24.—South Australian Branch, B.M.A.: Branch.
JUNE 25.—Queensland Branch, B.M.A.: Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 235, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

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